Model Boats

September 1982 70p
(I.R. £1.06, U.S.A. & Canada $3.25)

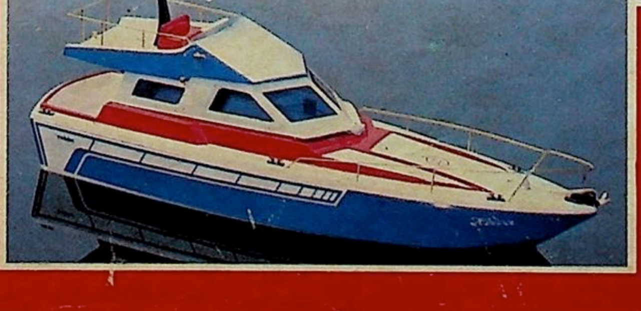
MAP MODEL MAGAZINE

The Titanic Sails On

PLUS

FULL SIZE PLAN for WW II German Destroyer

Kit Reviews



Sea Commander

Heica

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Billings Catalogue ...... 75p Post Paid

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Model Boats

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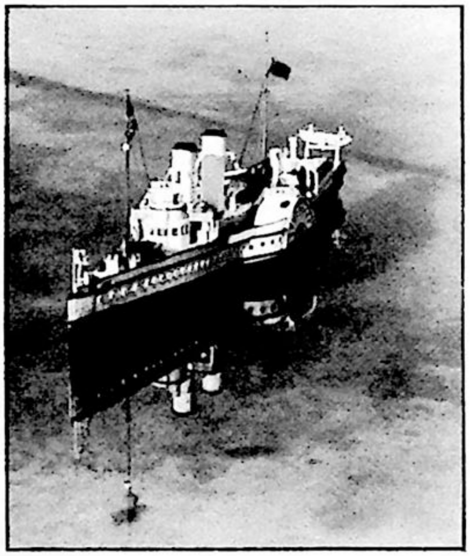

COVER

The Revell Titanic kit, constructed by Ray Rimell, provides this month's main illustration: a detailed building description allied with the history of the Titanic starts on page 484; transparency Ray Rimell. The insets are our two kit reviews, at left the Robbe Heica, at right Graupner Sea Commander. Both transparencies by Ray Brigden.

Correspondence anticipating a reply must be accompanied by a stamped, self-addressed envelope or equivalent. Forthcoming events should be notified at least seven weeks before publication date and are included as space permits. Prospective contributors are invited to send a self-addressed, stamped envelope for copy of our 'Model Boats Guide to Contributors.'

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ABC

MAP

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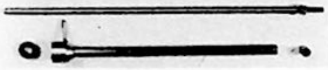

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3.5cc 1.8:1 ratio	£25.00
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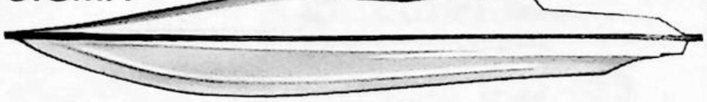
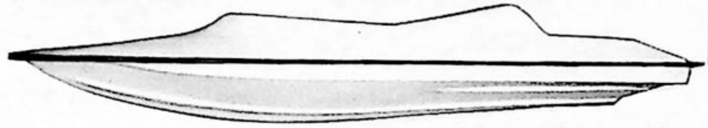
SIGMA



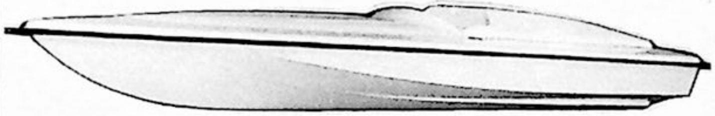
A radical new hull design developed specially for the World Championships. This boat is longer and narrower than either the Omega 20 or the Omega 40, and is far more stable with a very small wetted area which gives a fantastic high top speed. Every time we have raced the prototype hull with a geared 3.5cc engine we have been inundated with orders for it. We are now busily building a straight drive 6.5cc engine into a **SIGMA** because we are certain this will be better than the usual geared engines in this class. Complete with a new style deck which still allows the boat to be built very easily. Hull and deck unjoined **£28.00 POST FREE.**

OMEGA 50



Slightly longer and lower than the Omega 40, the 50 is ideal for 10cc engines and geared 6.5cc engines with exceptional stability and the usual Omega high speed. Available with two types of deck, one for under-deck tuned pipes and one for over-deck tuned pipes. **£29.00 POST FREE.**

CIRRUS



Something quite different, an offshore type powerboat that will actually turn right. The hull is based on the American mono type of hull and is capable of very high speeds with a .60 to .65 engine. 44in. long, 11in. wide.

£35.95 CARRIAGE £3.50 (48 hr. DELIVERY)

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ANTJE

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You'll find the hull as a ready-made moulding in PLURA, our new generation plastic, easy to glue and paint — leaks are out before you start.
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Technical details: Length 640mm. Beam 210mm. Weight 3000g.
Motors: Robbe Navy 4107 or 4083.

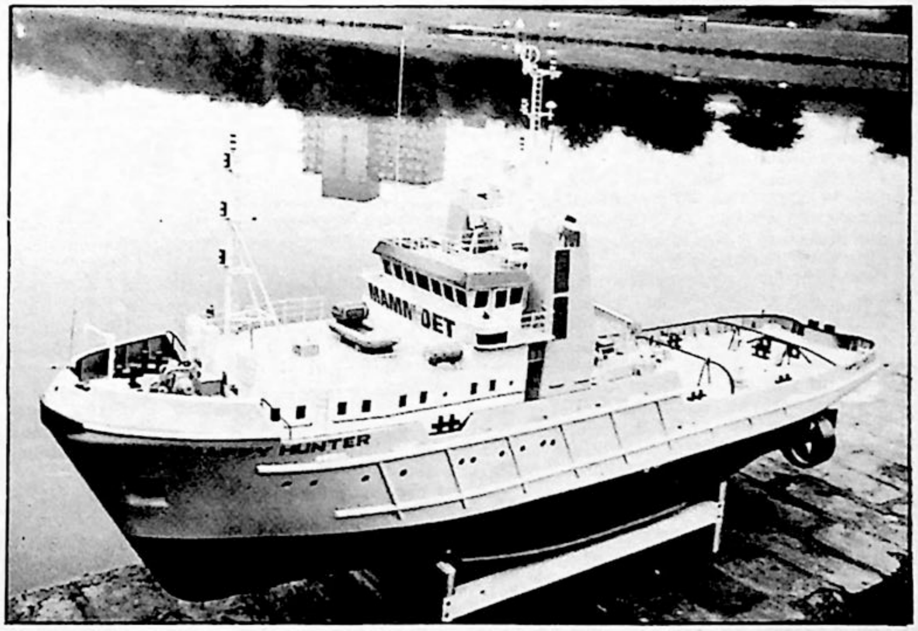
£25.74

HAPPY HUNTER

Our biggest challenge to date and a winner for sure. Happy Hunter is a scale model of the tug by the same name operated by the famous Dutch firm of MAMMOET.
The basis for our model is a superb 1-piece moulded ABS hull into which can be fitted a fantastic amount of operational equipment.
Propulsion is via 2 Robbe drive motor type 4083 or 2 x ELT-MAX 30G 4062, for the ultimate power output we have even developed our own special propeller for this boat to operate in conjunction with KORT nozzles. The manoeuvrability of the vessel just has to be seen to be believed.
For the modeller who wants to incorporate tons of operating features, we can offer working lights, radar rotation, anchor winch, towing hook, sirens and horns, and crane bow thruster. The fittings kit (optional) contains liferafts, railings, dingy, land ties etc., etc.

Technical details: Length 1035mm Beam 235mm.
Steering: Twin motors and rudders with bow thruster.

£84.23 **SEE KIT REVIEW AUGUST MODEL BOATS!**



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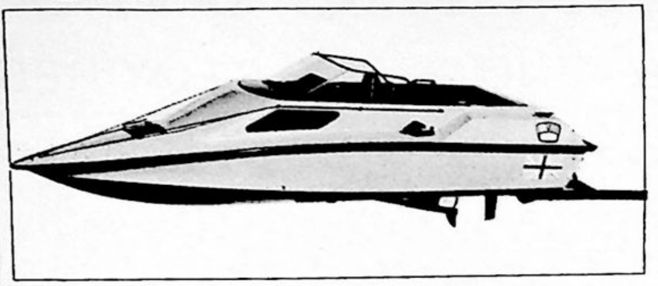

"Shadow £36.75. Length 27", Beam 9¼" for motors up to mild .19cu.in. motors, and electric motors such as the Cyclone 15

The Shadow has been designed specially with the sports boater and newcomer in mind. The profusely illustrated set of instructions make it the perfect introduction into model boating, and the very comprehensive kit includes fibreglass hull and deck, motor mount, shaft and tube, skeg, waterscoop, rudder, rubbing strip, scale fittings and decals.

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SHADOW GLOW MOTOR POWERED

Shadow kit, Enya 15 R/C marine, Futaba 2-channel c/w 2 servos, radio box, coupling, buoyancy bags, marine silencer, fuel tank, whip aerial, trim tabs. £134.00 POST FREE.

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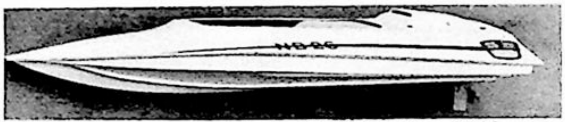

S.H.G. Laser motors 3.5cc-6.5cc. Length 33". Beam 12". — £35.75

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To complement our boats we have the finest range of accessories offered by any manufacturer. They include STAINLESS STEEL SHAFTS & TUBES — STAINLESS STEEL RUDDERS — FLEXIBLE DRIVE SYSTEMS — QUIET ENGINE MOUNTS — FLEXI COUPLINGS UP TO .90 SIZE — THRUST BEARING ASSEMBLIES — WATERSCOOPS — PROPS — BUOYANCY BAGS — BOAT STANDS AND TOOL CADDYS — TACHOMETERS — CHARGERS — 2v START PACKS — RADIO BOXES — IN OTHER WORDS VIRTUALLY EVERYTHING THE MODEL BOATER WILL WANT.

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BARGAIN OF THE MONTH must be the Marine HP40 Rear for only **£30.95.** This sport engine is ideal for flattie hulls and scale boats alike.

On hulls, we repeat the following info. on the latest release: J/K/N Class Destroyer, Scale 1:96 GRP with plating detail **£25.88.** We also have a hull 21¾" to match the Billings Kits of the Mary Ann or the Krabbenkutter **£15.50.**

The range of RIVABO BRASS PROPS in 3, 4 and 5-bladed version LEFT and RIGHT hand is now available. Send 10p (stamps) + SAE for list.

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Latest in a growing range of R/C yachts is the Robbe PIROL 50" with moulded hull and deck in PLURA groovy mast, keel weight and 1 suit of sails **£114.27** complete. Alternative sails will become available. The Krick TINA 900mm "una rig" (1 mast, 1 sail) performs well. Price **£43.50** and the Hegi MISTRAL, 1065mm is a scale Bermuda yacht at **£84.86.**

The Jackson 380 electric outboard has now been put to use for another kit — Robbe CILLA 570mm **£13.36** so if you tire of the Santa Monica, put the motor into this new speed boat.

We still have supplies of the excellent quality plank-on-frame kits Thames Sailing Barge KATHLEEN now down in price to **£43.49,** and the Hastings Lugger now at **£36.00.**

This range which includes a Narrow Boat and a Gig is no longer in production, so if you are thinking of building one, buy it NOW — stocks will soon be exhausted.

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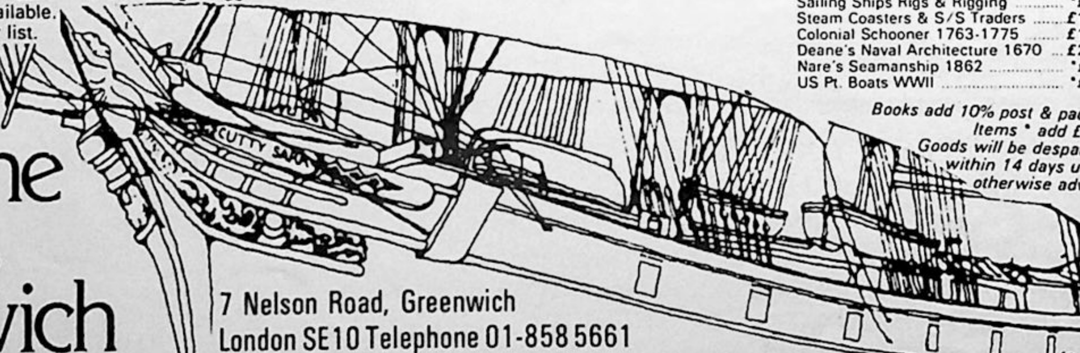

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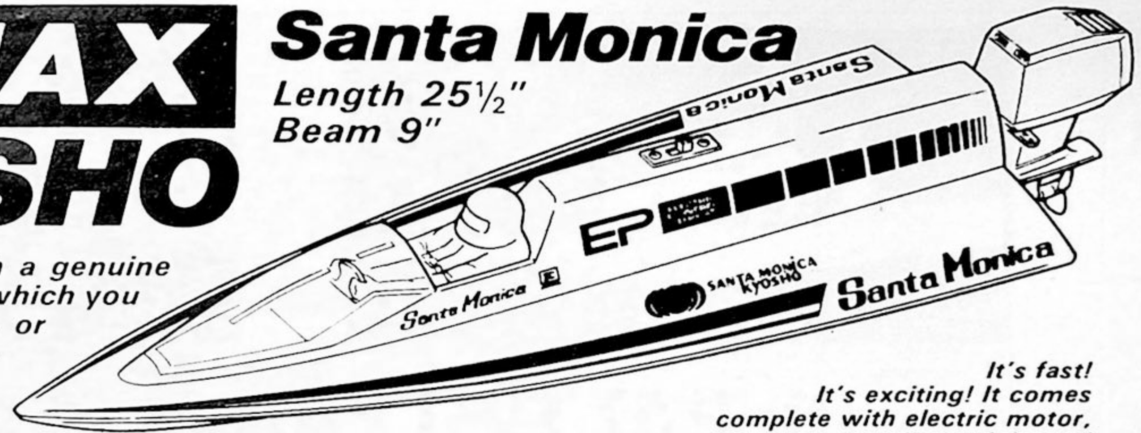
RIPMAX KYOSHO

Santa Monica

Length 25½"
Beam 9"



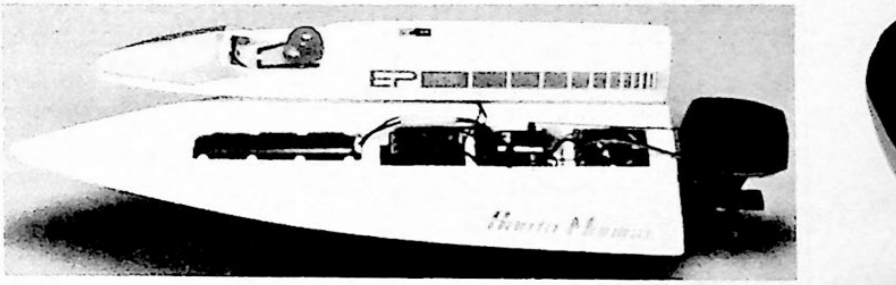
It's a 'Class' boat with a genuine RACING performance which you can use for contests - or operate just for fun. 2-channel radio gives steering plus speed control.

It's fast! It's exciting! It comes complete with electric motor, virtually ready to go!

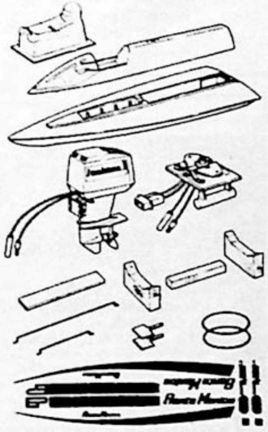
Hull form is the very latest modified ski-hull type — Deep Vee with tapered wedge flat bottom surface for more lift, less drag. FASTER performance with 'deep-vee' stability in turns. Ready-formed hull and deck unit is in lightweight foam plastic for maximum power/weight ratio. Powered by a RACING OUTBOARD for optimum balance and trim — plus optimum turning ability.

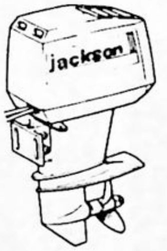
Simply screw the outboard onto the reinforcing plate moulded into the transom, press-fit the SPEED CONTROLLER and radio gear (not included) into the compartments moulded into the hull, hook up the linkages — and you are ready to go. Total weight (including radio) 950 grams.

price complete with motor & speed controller £39.95



Kit includes ready-formed hull, deck and driver/console mouldings, JACKSON RS-380 electric OUTBOARD, SPEED CONTROLLER and almost everything else you need*, even a complete decal sheet for final colour scheming. (*2-channel radio and batteries are extra).





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RS-380 (1:1.67 gearing) £14.95
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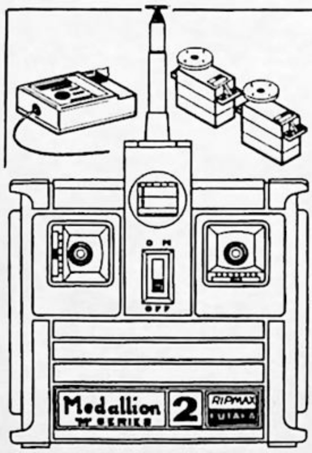

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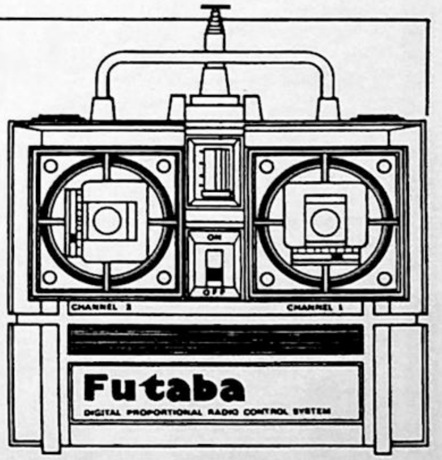
For your radio outfit **RIPMAX-FUTABA** is your logical choice. The LOW LOW PRICE of the **Medallion '2' outfit complete with two servos is only £44.50,** including wiring harness and switch, Rx battery box, 1 pair of crystals and frequency pennant. 'L' Series Tx/Rx Combos start from only £32.50 for the 2-channel 27AM Drycell Combo. (S123 Servos are £13.00 each extra), and give you the option of converting to Nicad operation at a later date. 3-, 4- and 5-channel 'L' Series Combos are also available if you are planning a more advanced model. Whichever Ripmax-Futaba outfit you choose you can be sure that you are getting guaranteed **PERFORMANCE,** incomparable **RELIABILITY AND TREMENDOUS VALUE-FOR-MONEY.**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CHANNEL 2
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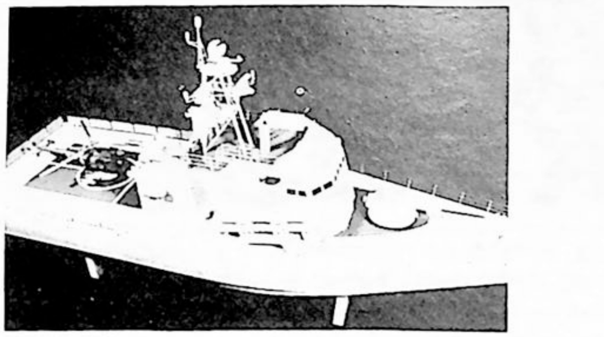

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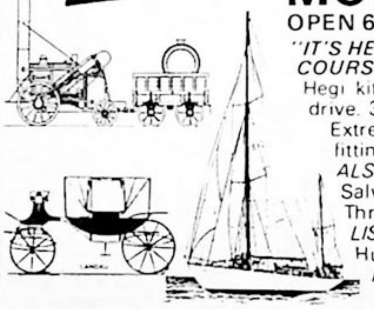

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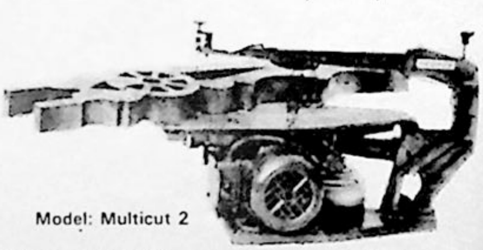

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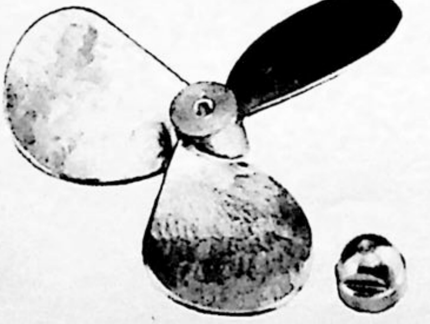

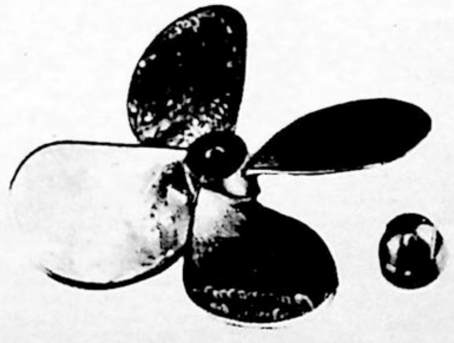

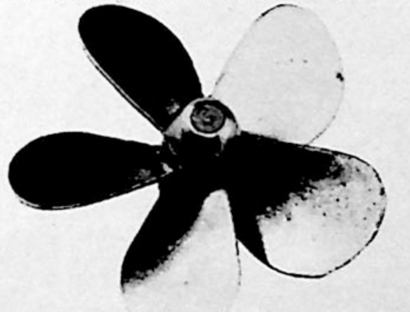

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167-15	R	M4	ø55	£3.40
167-16	L	M4	ø55	£3.40
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167-18	L	M5	ø55	£3.50
167-19•	R	M5	ø60	£3.60
168-05	R	M4	ø40	£2.85
168-06	L	M4	ø40	£2.85
168-07	R	M4	ø45	£3.10
168-08	L	M4	ø45	£3.10
168-11	R	M4	ø50	£3.55
168-12	L	M4	ø50	£3.55
167-28	L	M5	ø80	£6.30
167-29	R	M5	ø90	£6.80
167-30	L	M5	ø90	£6.80
167-31	R	M5	ø100	£7.65
167-32	L	M5	ø100	£7.65
167-33	R	M5	ø110	£8.55
167-34	L	M5	ø110	£8.55
167-35	R	M5	ø120	£9.50
167-36	L	M5	ø120	£9.50
167-37	R	M5	ø130	£10.35
167-38	L	M5	ø130	£10.35

POSTAGE ON BRASS PROPELLER OVER £10.00 FREE. UNDER £10.00. EACH ORDER: ADD 50p UK. OVERSEAS: PRICES UPON APPLICATION. REMEMBER TO QUOTE LEFT HAND OR RIGHT HAND.

ALL POINTS

Club of the Month
Crawley and District Model Boat Club

P. R. Tobutt, Regatta and Competition Secretary, provides the following information:

"The club draws its current membership of 40 persons mainly from Crawley with a few of us living further afield at Horsham, Burgess Hill and Horley. We have some ten junior members.

We meet regularly on Tuesday evenings at our own club house (a converted WW2 army hut) in Tillgate Forest on the outskirts of Crawley. Annual subscription is £10 per year adult membership.

Boating takes place on Ifield Mill Pond, Bewbush Estate, Crawley, a large clean water lake on which we have exclusive boating rights by arangement with Crawley Council.

During the summer months we hold some six to eight regattas on the Mill Pond; this year we have decided to run some of these as open events. (*Model Boats,* May issue for dates).

The club members have a wide variety of model boating interests. We have five or six keen multi enthusiasts, together with a similar number of fast electric fans. Three or four of the members have recently been dabbling in R/C sailing boats and others are showing interest in this aspect. However, the mainstay of the club is semi-scale and scale boats (many of the latter including the ever popular tug boat in all its shapes, sizes and guises!) A few of us engage in model warship construction using plastic sheet, abs moulding or, in my own case, soldered tinplate (nothing quite like a real iron ship, is there?)

We produce a bi-monthly newsletter for our members and help to pay for this and other expenses by selling bingo or football lottery tickets.

Apart from the regattas and normal 'fun' sailing/boating on our own pond, we do periodically give scale boat demonstrations at local school fêtes around the area. We also take a large stand at the annual Crawley and District Federation of Model Societies' Exhibition in September (25th and 26th, as a diary note).

During the winter months we invite visiting speakers to talk on model boating topics — some of our members have even been persuaded to explain their own methods of construction and interests."

The Eastbourne Model Power Boat Club has been in existence since 1951, but have yet to host their first scale regatta. The big day will be 30th August and scratch-built and semi-scale R/C boats will be catered for; electric and steam powered only. Starting time is 10 30 a.m., the entry fee if £1 per boat and whilst entries will be accepted on the day, pre-entry to A. Peneley (we think), at 23 Maplehurst Road, Hampden Park, Eastbourne, Sussex, would be appreciated. Mr. Peneley advises that the emphasis will be on fun rather than a minutiae of rules and regulations.

* * *

Drive/Sail Weekend

The Harrogate Model Car Club in conjunction with the Harrogate Model Boat Club are organising a Drive/Sail weekend, 11/12th September 1982 at Newby Hall, Ripon.

The car event will be a national two-day off-road competition for electric buggies with sponsorship by Tamiya Plastic Model Co. Ltd. and Crystal Motors Ltd.

The boat events will include an electric scale competition, best kit built model, (sponsored by Cougar Craft), tanker docking and fast electrics, etc.

This joint venture will be the first of what is hoped to be an annual event, not only concentrating on boats and cars but other forms of modelling activity.

The Newby facilities include a restaurant (licensed), 25 acres of beautiful gardens, miniature railway, adventure playground and the beautifully decorated Robert Adam's House. The objectives of the meeting are to provide an event where it is not only the competitor who has a good time but the remainder of the family are equally catered for. Camping and caravan facilities are available.

Further details from Ian Thompson, (Harrogate Model Boat Club, c/o 3 John Street, Harrogate, Tel. Harrogate 66787 or Geoff Little, (Harrogate Model Car Club, 12 Birstwith Grange, Birstwith, Harrogate, North Yorkshire, Tel. Harrogate 770717.

* * *

Sub-Mariners' Association

It is hoped to form a new Association of Model Sub-Mariners, bringing together the many model boat enthusiasts who have succumbed to the

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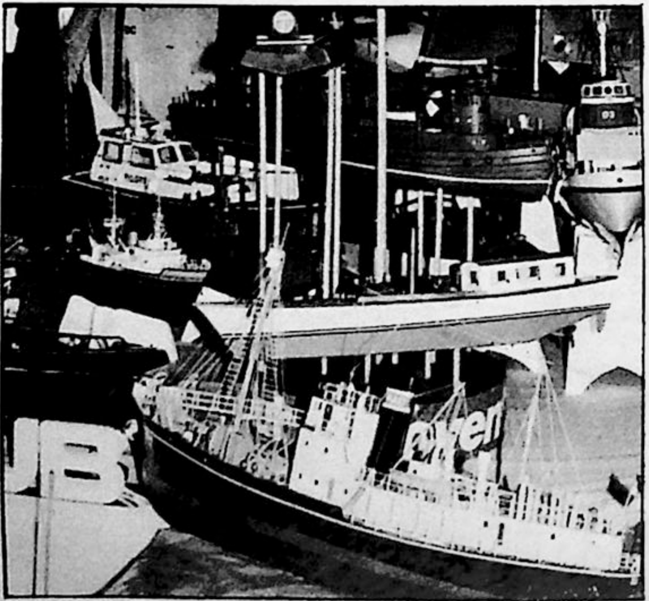
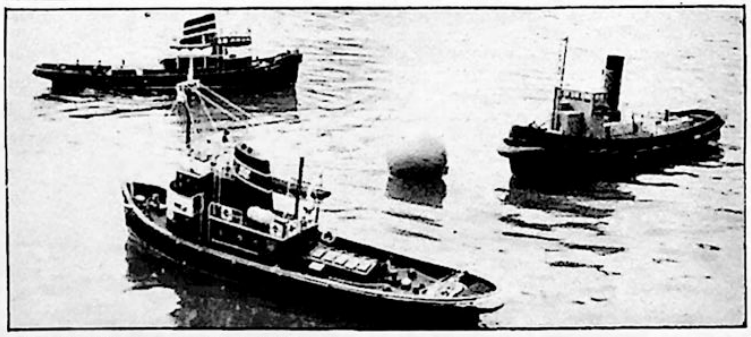
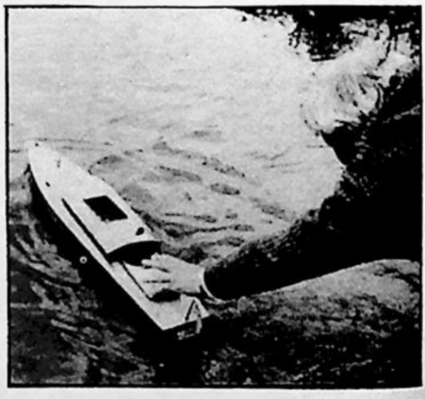
MODEL CRAFT AND COUNTRY SHOW
STONELEIGH
MAY '82

Just a minute part of the impressive static display(over 70 models) organised by midland area clubs.





Over 25,000 people visited MAP's first event of this kind at the Royal Agricultural Showground. Model boats were well represented amongst the wide variety of leisure pursuits on display - ranging from model engineering, R/C aircraft, cars, live steam, military models, space models, woodworking, country crafts, jewellery, etc., etc. The bulk of the model boating activities were organised by Coventry MPBC with active assistance from Kingsbury and Leicester Scale clubs. 'Midland' Tug Towing Co.' consisted of a number of Tids and Suns from Coventry and Kingsbury, and invited participants from outside the area included Alwyn Greenhalgh, seen at right about to launch Leda III, the oldest operational powerboat in the UK (Leda III photo courtesy M. Kemp.)



particular fascination of model submarines. Anybody interested in joining the Association should write to Roger Serpell, 25 Onslow Road, Richmond, Surrey, enclosing a large stamped addressed envelope. All prospective members will receive the first of what is hoped to be a quarterly newsletter giving information on kits and plans available; hints and tips, book reviews and addresses of other keen model Sub-Mariners.

* * *

Shipbuilding on the Thames

In 1782 the Worshipful Company of Shipwrights was given a grant of a livery by the Court of Aldermen of the City of London. Two hundred years later, as a major contribution to its bi-centenary celebrations, the Company is presenting an exhibition, Shipbuilding on the Thames, at the Museum of London.

The exhibition will explore the major shipbuilding changes which occurred during this important period of the Company's history. More than twenty, mainly contemporary, models of Thames-built ships will chart the changes from wood to iron, sail to steam and paddle to screw propeller. These models cover a wide range of craft, including the 100 gun *Britannia* (1719), the East Indiaman, *Seringapatam* (1837), the famous merchantman, *Great Eastern* (1858) designed by Brunel and Scott Russell, and a Thames sailing barge. *Kathleen* (1901).

London was previously the major British shipbuilding centre, and the Shipwrights' Company is both marking London's splendid tradition of shipwrighting in this exhibition, whilst continuing the Company tradition of promoting maritime interests and skills throughout Great Britain through its educational and charitable work.

The exhibition will be opened on 22nd July by the Permanent Master of the Worshipful Company of Shipwrights, HRH The Prince Philip, Duke of Edinburgh. From 23rd July until 17th October the exhibition will be open to the public.

Museum opening hours: Tues.-Sat. 10.00-18.00 hrs.; Sun. 14.00-18.00 hrs., closed Monday.

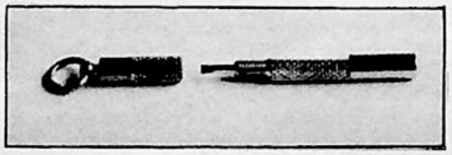
* * *

Model Boats' Price Increase

Due to steadily rising costs, it has been necessary to raise the cover price to 70p, commencing with this issue. Direct rate UK subscription will rise to £11.80.

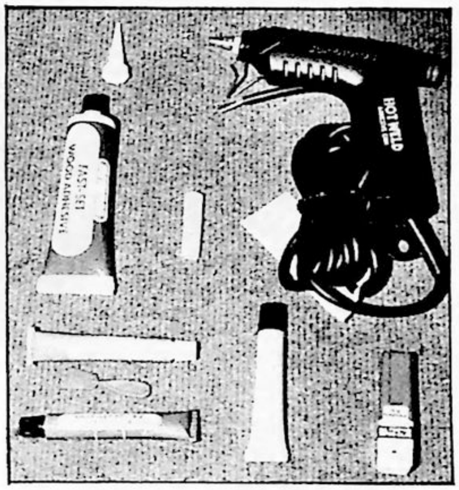
* * *

TEST BENCH



The pocket screwdriver is devised to allow on-the-spot adjustments of eyeglass frame screws as it can be attached to a key ring. There are obvious uses for a modeller, plus of course on cameras, watches, calculators, etc. The blade is protected when not in use by a screw cap and comes with a ring attached. Known as the **Maxon Pocket Eyeglass Screwdriver**, it is blister packed and retails at £1.20 inc. VAT. Trade enquiries to **Thunder Screw Anchors Ltd.**, Industrial Estate, Southwater, Horsham, West Sussex.

* * *



A new product range of adhesives has recently been announced by **Supergloy**, of particular interest to modellers. **Fast-Set Wood Adhesive** comes in a blister packaged 60ml tube and is a pva-type adhesive with a fast tack of around 3 to 4 mins., and strong enough to withstand light machining or sanding after approximately 10 mins. It is not recommended for outside environments.

The **All-Purpose Super Glue** is also blister packed and is supplied in a 3gm container with re-usable inner cap and protective outer cap. Porous and non-porous surfaces can be glued.

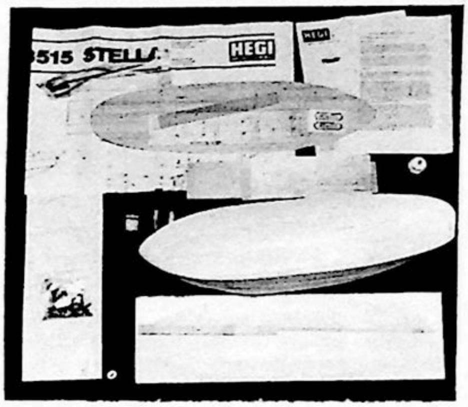
Fast-Set Epoxy is in the normal two tube pack with a mixing spatula. Thirty-two gm is supplied (16 hardener, 16 resin).

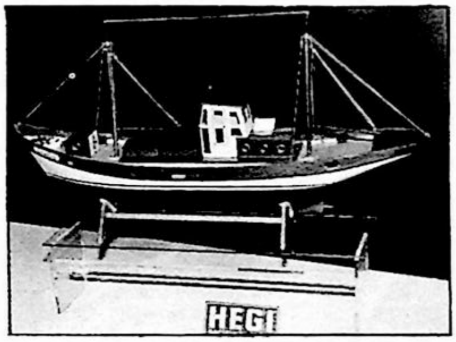
The **Balsa Cement** is in a 12.5ml tube and is also suitable for bonding abs plastic. It is fuel proof and water resistant.

Finally from **Supergloy**, the most useful item for boat modellers (and for use around the home) is the **Hot Weld Adhesive Gun.** Larger industrial versions of this type of tool have been around for some time, but as far as we are aware this is the first at a smaller handier size for model and domestic use.

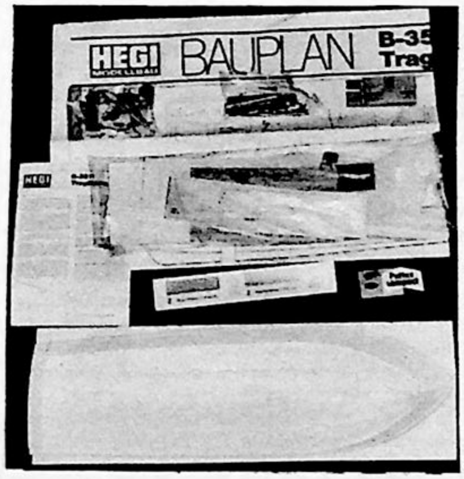
The thermostatically controlled gun plugs into the mains supply and is ready for use in three to four minutes. Eleven mm diameter solid adhesive sticks are fed into the rear of the gun by hand and these are melted by the high temperature (206°C) and a liquid adhesive emerges at the nozzle for application where required. The surfaces to be joined are brought together immediately, setting starts after 30 seconds, and 2 minutes is required for setting. After use the gun is switched off and allowed to cool. Adhesive sticks are not removed but will of course melt and be ready for use next time the gun is switched on. A sprung clip keeps the hot nozzle off the working surface when the gun is not in use and a hole is moulded in the handle for hanging in the garage or workshop. Supplied with 6ft. of cable, and six sticks of adhesive, this useful and versatile tool costs £27.83. The glue will stick virtually everything, porous or non-porous.

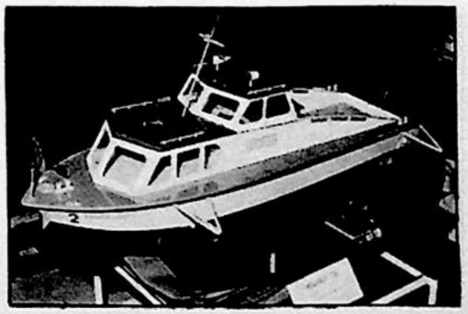
* * *





Cougarcraft are now well known as the distributors for **Robbe** model goods — however they are also responsible for the **Hegi** range of kits. Two examples recently inspected were the fishing cutter *Stella* and the hydrofoil police boat. *Stella* is a typical German kit, using an abs one-piece hull, with deck and motor/shaft sub-deck also in styrene. A wooden deck lays over the





styrene and fully die-cut wooden parts are supplied for the wheelhouse and hatch assembly. The electric motor (3 volts), shaft, rudder and all fittings are included, as are the necessary adhesives, transfers, a fullsize plan and illustrated instructions with a complete English translation.

Suitable for beginners, *Stella* could be run free or be equipped with 2 channel radio. Price is £37.52 including VAT.

The hydrofoil is typical of the type used by German Police in inland waters since 1957. The kit contains a ready-formed abs hull with many die-cut plastic and wood components. The most important part of the model, the foils, are pre-shaped in hardwood and all necessary aluminium supports are included. Hardware components are rudder, shaft (which incidentally uses a piano wire flexible drive) and propeller. Detailed fittings, decals, fullsize construction, instructions and glues are also included. An RS 540 type motor and eight to ten 1.2 volt 1.2 amp/hour Ni-Cad cells are required. The length is 700mm × 225mm wide, 400mm high; weight approximately 2.2kg. The price of this uniquely different model kit is £51.32, including VAT.

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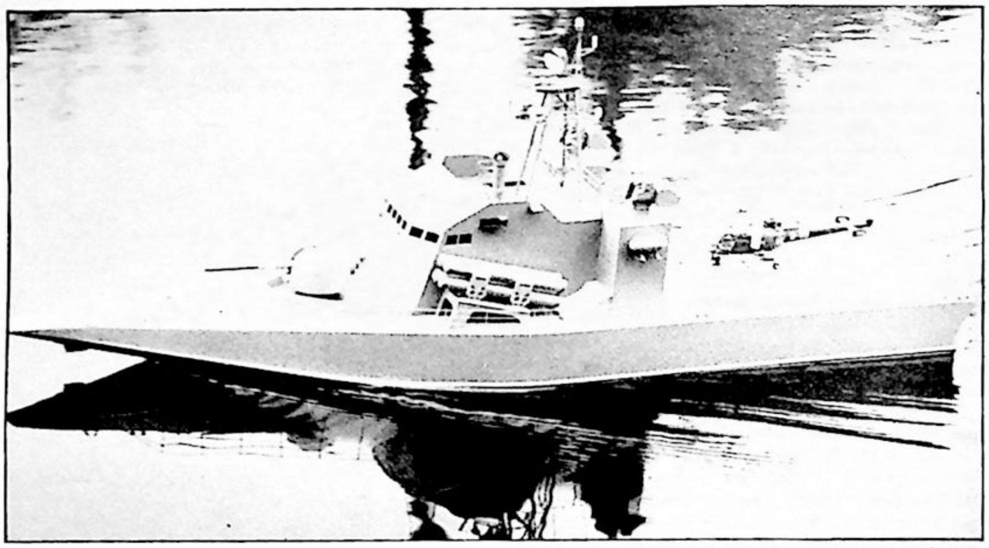
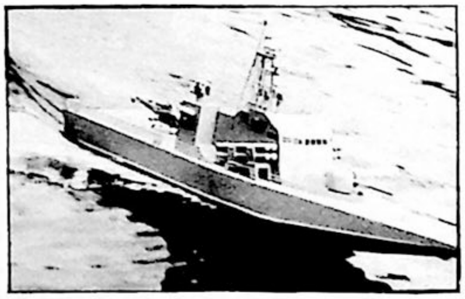
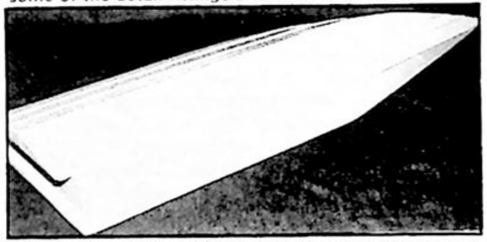
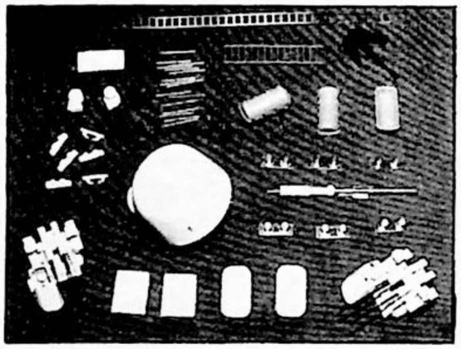




Modelcrafts' NATO Patrol Craft cruising and at left, full speed with two Falcon motors and 12 volts. Below, the grp hull with built-in spray rails and trim tab. Bottom, some of the detail fittings available as extras.





We are sure that many readers were intrigued by the unusual warship model depicted in recent advertisements by **Modelcraft** of Leicester, an offshore high speed patrol vessel, British conception, Swiss design, for NATO forces. We have recently had the opportunity to inspect a completed model and the component parts on offer from **Modelcraft**. The design is certainly different and it grows on one. The hull can best be described as a moderate V with two full length rails, 40in. long × 12in. beam, and very alike many multi-racing hulls. As would be expected therefore, efficient and clean running is obtained and the performance with the two *Falcon* motors is excellent, as can be judged from our photographs. To keep prices down **Modelcraft** do not supply a kit as such, but rather the hull, components and detailed fittings; such as twin ack-ack guns at £3.50 each, front gun turret at £4.95, (both moulded in resin, as are the detailed fittings — motor vents and doors). Bollards, liferafts, stanchions, anchor, motors, couplings, shafts, propellers, etc. are available as required by the modeller. One can therefore decide as to one's own degree of scratch-building ability and purchase accordingly.

The hull is a masterpiece of grp moulding and incorporates the unusual trim extension at the transom and the chine line spray rails in addition to the four full length rails.

All up weight is 11¼lb. To drive the two 12 volt *Falcons*, a 10-cell 4 amp/hour Ni-Cad set-up is also available from **Modelcraft**.

If required, a helicopter or *Harrier* plastic kit at the correct scale, 1:48, can also be supplied.

The cost of the grp hull is £26.95 plus £2.50 carriage. Other components are priced individually and further details can be obtained direct from **Modelcraft**.

MAIL BOAT

Scale and Salt

Dear Sir,

I wish to reply to the letter in the June Mail Boat column entitled 'Salty Scale'.

The Southern Area Scale Championships has a high percentage of salt water venues because clubs with salt water lakes are among the regatta organisers who are prepared to organise a regatta along the lines of the scale championships.

As to salt water being agressive towards fine detail, this I do not accept. I and the vast majority of other scale boaters in the south are fully prepared to operate on salt water and we are in the habit of giving our models a coat of paint to protect them from all water conditions.

Perhaps the writer is only building canal boats and fresh water lake steamers? These he can operate on any pond fully to scale. I and the majority of other scale boaters build models of real ships that operate on real water conditions.

In trying to select people to represent the Southern Area in the National Scale Championships, we want people who are consistently good, not only at building models, but also at getting them around a scale regatta course; we also want to encourage people to travel to open regattas and support other clubs.

The number of boats per class in the final, (the writer does not take into account any models in the stand-off or kit-classes) are set by the general membership of the MPBA in postal voting; 6 per class per area is what they want.

As to dividing up the trophy as your writer suggests, I went to 16 scale regattas last year and did not see it done this way once.

The scale rules are set by the majority of the membership of the MPBA. I and the other area secretaries will not consider for an instant changing them so that they favour one contestant only. These rules have been run for the last three years and this is the first complaint I have heard about; I make the effort to go out to scale regattas and compete against other people equally. I do not want alter the rules in my favour.

Finally, I would point out to your writer that the regattas on the MPBA regatta list are open to MPBA members only. Last year your writer was refused entry to one of our regattas because he was not a member of the MPBA. Tell him to join the MPBA and then he can try to alter the system from within.

David Metcalf,
Dane End, Ware, Herts.

* * *

The Civil War 'David' Ram and Spar Torpedo Boat (1)

Dear Sir,

I have been fascinated by these vessels for some years now as, for me, that sad period in American history has become somewhat an obsession.

Perhaps some four summers ago I attempted to build a *David*. The subject of my project would have measured 6ft. in length, and was destined for straight running competition work. Sadly, construction problems and the lack of evidence stopped my model aspirations. However, I have not ceased to collect information on the craft, the sum of which I would like to share. Accordingly, the following is offered as a supplement to the article published in July's issue of this magazine.

Firstly, it must be stated that facts are very scarce, the Confederate submarine operations were highly secret, and records were burnt at war's end to prevent exposure. No one knows exact numbers built by the south, nor the doubtless variants on the basic theme that were constructed.

What can be established would indicate the plan as drawn by Mr. Metcalf for the July issue is a fair impression of the type. Indeed, in general detail it closely resembles the original design produced by a St. Julien Revenel, M.D., from which the vessel was built at Charleston in 1863. The sketch plan of the craft still exists. This contemporary evidence provides the following information: (1) length of vessel — 51ft., (2) no deck fittings were provided, i.e., stanchions or flagpole, (3) rounded tips to propeller blades. Otherwise the detail is substantially as drawn by Mr. Metcalf. The torpedo, as used, as an offensive weapon (rather than a floating mine, then called 'torpedoes') consisted of a container of explosive mounted on the end of a spar, which was so rigged that it could be carried out of the water and lowered when the attack was about to be made. Detonated by contact, the impact against a ship's hull set off a percussion cap or chemical fuse; by a trigger mechanism fired by pulling a long lanyard at the moment of contact; or by electricity.

A number of attacks were carried out against the blockade fleet off Charleston. They severely damaged the *Minnesota* and exploded a charge against the *New Ironsides,* giving her a shaking up, but doing no damage. The vessel which attacked the *New Ironsides* was built by a Mr. Theodore Stoney as a private venture and donated to the CSN. One of the two known photographs of the *David* breed shows Theodore's craft beached after the war and clearly illustrates additional armour sheaving over and above that drawn to the Revenal plan. The aft end is armoured by narrow iron plates laid in a rough triangular shape from the deck housing to the propeller bearing cone. A similar method of protection appears to have been afforded to the foremost part of the boat. The propeller on Theodore's *David*, as photographed, is in very bad shape having lost one blade. The remaining fluke is shown with angular tip, whether by design, or, considering the damage to the other, by accident, is anyone's guess — with sparse information you can take your choice.

What is certain is that the very first *David* was a vessel named *Pioneer*. Early in the war Confederate Secretary of State Benjamin received a letter from a Mr. J. K. Scott requesting a naval commission for a 'submarine boat'. Said vessel had been built at New Orleans in March 1862 and was 34ft. in length, measured at 4 tons, with round conical ends and painted black, crewed by two men.

Indeed, the common colour scheme for the class would appear to have been black, although one contemporary oil painting has the depicted vessel painted grey. This painting shows the *David* tied to the wall of Charleston harbour and is shown with cowl vents fore and aft on the centre line, armour section over boiler and pilot position only.

The vessel which sank the New Federal steam sloop *Housatonic* although known by the generic term *David*, was a totally different craft in concept and design. The *David* proper was a steam driven purpose built, conical ended vessel. The victor of the *Housatonic* was *C.S.N. Hunley*, converted from an old water tube boiler and hand cranked by a crew of none (one to steer, eight to provide motive force). The *Hunley* was some 25ft. in length and 4ft. at its widest. Water ballast tanks were installed, with pumps to force out the water, which was admitted through sea cocks. Depth was controlled by two lateral fins, on a shaft running through the boat. There were two hatches, with a mere 8in. of coaming, into which glass ports were set as the only means of conning the craft after being rigged for diving.

Nicknamed 'fish torpedo boat' and 'floating coffin', *C.S.N. Hunley* was the first submarine constructed for deep submergence. Designed by H. L. Hunley with the aid of Baxter Watson and J. R. McClintock (inventors of *Pioneer*) she was built in the machine shop of Park and Lyons at Mobile. During Mobile trials, volunteer crew and designer drowned in *Hunley*. Moved overland to Charleston she made four more fatal trials. However, Lt. G. E. Dixon of 21st Alabama Infantry volunteered to captain the vessel (I'd count that as grounds for certification!). The night of 16th February, 1864 enacted the nemesis of war; *Hunley* sank the *Housatonic*, the blast sank the *Hunley* — sixth crew to perish in the converted boiler. The *Hunley* design was not repeated.

It would have been nice to have produced a plan of the *Hunley*, as a companion to David Metcalf's *David*, but there really is insufficient information, and such a venture would have owned more to conjecture than fact. Still, my next project is to be a Federal torpedo boat, which appeared late in the conflict and whose details are still preserved. More on this anon.

Ray Cattle,
Thornton Heath, Surrey.

* * *

The Civil War David Ram and Spar Torpedo Boat (2)

Dear Sir,

I was delighted to see David Metcalf's article on the *C.S.N. David* (P. 378, July), but hasten to correct him on the subject of the attack on the steam frigate *Housatonic*. This was not carried out by a *David* type torpedo boat but actually by a purpose built submarine, the *Hunley*. No doubt the *Hunley* owed a great deal to the semi-submersible *David* but it was not a conversion, and was constructed from a 25ft. long boiler cylinder with pinched-in ends. She was propelled by a hand cranked screw worked by eight men, and under the control of two others in lookout hatches at each end. Armed with a spar torpedo, she had a top speed of about 4mph, and by her very nature, only a limited range. She worked well enough, being able to proceed, descend and ascend more or less at her commander's will, but she was unfortunate enough to drown two crews before her final adventure on that February evening in 1864. She left Charleston and at a depth of some 6ft. made towards the blockading warship *Housatonic*, surfacing from time to time to adjust her course. Unknown to her commander, Lt. G. Dixon, she was spotted by her victim's lookout at the last moment and the *Housatonic* slipped her anchor and backed her engines. The resulting collision surprised both opponents, but the exploding torpedo blew the stern of the *Housatonic* right off, sinking the ship in a few minutes. Unfortunately, the *Hunley* became entangled in the wreckage, and it too sank, drowning the final crew.

She was, even so, the first submarine to sink an enemy ship in war.

J. Rumble,
Swindon, Wilts.

* * *

Armed Salvage Tugs

Dear Sir,

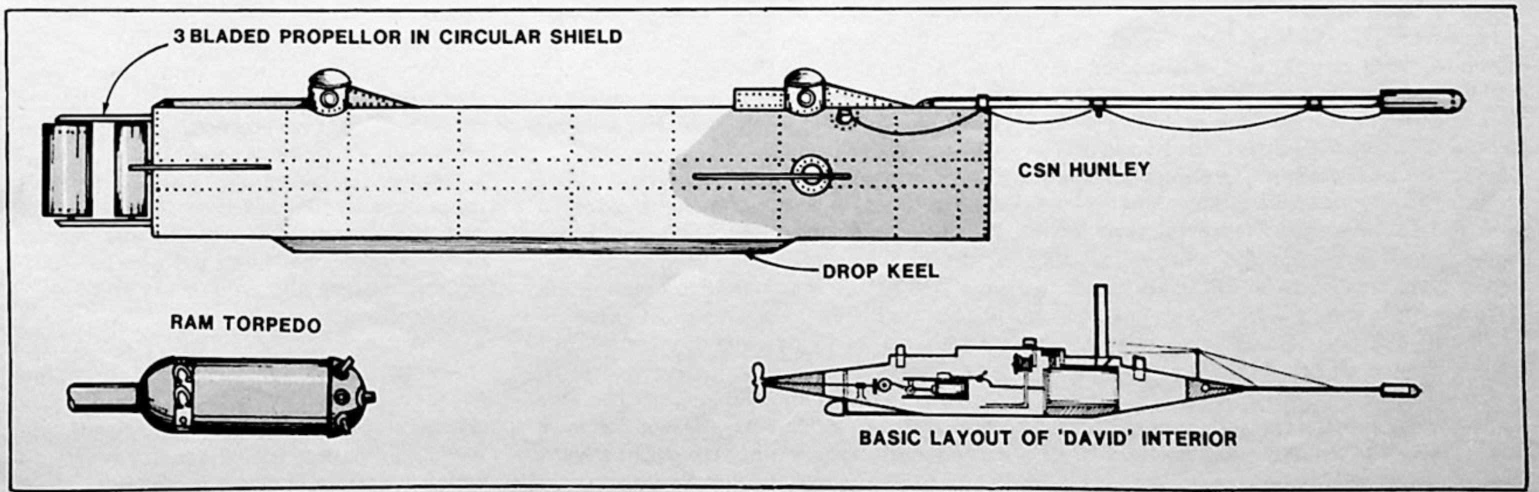
As a newcomer to model shipbuilding, may I take the liberty to enquire whether any of your readers might suggest where I might obtain plans, photos or drawings of armed salvage tugs used in moving the Mulberry units to the Normandy coast prior to D. Day?

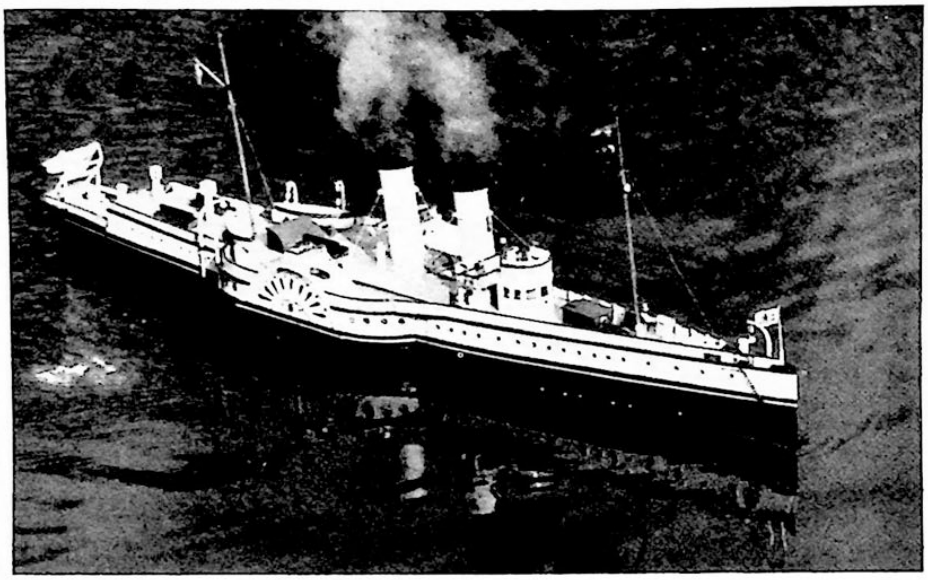
I believe they carried one 3in., two 20mm and two .303mgs.

I have a Kingston Mouldings' 1943 *Tid* Class steam tug 35in. hull, in my possession, as a basis for this project.

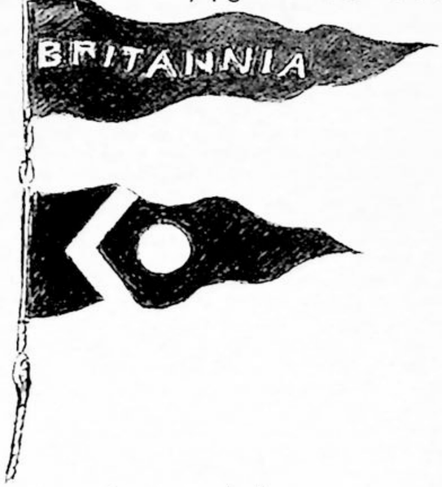
Thanking you in anticipation.

Pat Loughran,
20 Richmond Grove, Monkstown,
Co. Dublin, Ireland.


3 BLADED PROPELLOR IN CIRCULAR SHIELD
CSN HUNLEY
DROP KEEL
RAM TORPEDO
BASIC LAYOUT OF 'DAVID' INTERIOR



A steam powered paddler. Scaled at $^3/_{16}$in. to 1ft.



P.S. Britannia

Designed by Kenneth F. J. Fell

OF all who have only a fleeting interest in paddle steamers, there can be very few who have not heard of P. & A. Campbell's White Funnel Fleet. Names like *Ravenswood, Cambria, Glen Usk, Westward Ho!, Glen Gower, Brighton Queen, Devonia, Bristol Queen, Cardiff Queen* were some of the paddlers that sailed under the ball and chevron house flag and remind folk of holidays or summer outings on the South or West coast.

Captain Peter and Captain Alexander Campbell maintained a steamer company that plied the Bristol Channel and South coast, even to Boulogne or Calais, after their transfer from the Firth of Clyde. In 1887 after the death of their father, Captain Robert Campbell of the Kilmun boats, it was Alex Campbell's decision to come South away from the 'cut and thrust' of competition of the Railway Companies and excursion steamer fleets of the Clyde and Western Isles.

However, it was the flagship of this Company that caught my imagination, a paddle steamship built in the late 1800s and still in regular service in 1956, that served with the Royal Navy in two World Wars. So this was no ordinary paddle steamer by any means, not surprisingly she was the fastest ship in the fleet which ranged to 13 vessels in the 'thirties', all of which were in excess of 200ft. in length. The most interesting fact was her speed of 21 knots, faster than her two post-war sisters *Bristol Queen* and *Cardiff Queen* with speeds of 18 and 17.5 knots respectively. Perhaps a potted version of this steamer's life story will explain her fleetness and resilience.

P.S. Britannia was built by S. McKnight of Ayr, yard no. 48, and was launched on the 14th of May 1896. Her dimensions were 230ft. length, 26ft. 6in. beam and 9ft. 6in. depth, of steel construction at a gross tonage of 459 tons. The engine was built by Hutson & Son as a diagonal compound engine, two cylinders — 37in., 66in., NHP 304. She was brought down from Scotland and registered at Bristol, commencing her maiden voyage from Hotwells to Ilfracombe. This service she maintained until the 5th of February 1915, when she carried out her first War service minesweeping as *HMS Briton*.

In 1921 she had a major refit when her large square saloon deck windows were replaced with portholes (as was Campbell steamer practice) making her a far more secure ship in open seas. New boilers were fitted and radio was installed necessitating the addition of a short main mast. She returned to service in the Bristol Channel until 1935 when structural changes gave her an oval funnel, new boilers, two additional lifeboats and a deckhouse. In 1939 she became *HMS Skiddaw*, a naval AA vessel until 1946.

After the war *Britannia* uderwent a major change, two lifeboats were removed, also the deckhouse, and a new Fairfield double-ended boiler was installed fired by oil fuel. This also required a change to two funnels to suit the boiler flues. This power change gaver her a speed increase of a further knot and considerable improvement in stokehold efficiency and conditions. Her service from Bristol to Ilfracombe was resumed though oft times excursions were made to Penzance and the Scilly Isles. In 1954 a full length mainmast was added in place of her short radio mast to conform with fresh regulations concerning riding lights.

Although she was superseded as flagship of the Campbell fleet in 1946 by the *Bristol Queen*, she was much revered by Bristolians who had known her for some many years, and was undoubtedly Campbell's fastest ship until her withdrawal from service in 1956. On the 7th December that year she went to the breakers at Newport.

I like to think it was the decline of the paddle steamer that beat this vessel, not her age, for the number of paddlers could now be counted on both hands in service around the British Isles. She was certainly a ship of some considerable merit that to me had that indefinable 'something'. Did the men bending the frames for her hull know from her lines she would be a crack steamer? Did Hutson & Son realise the craftsmanship of their compound diagonal engine would outlive the men who machined the surfaces and use three sets of boilers in the process? Certainly the choice of her name was ideal.

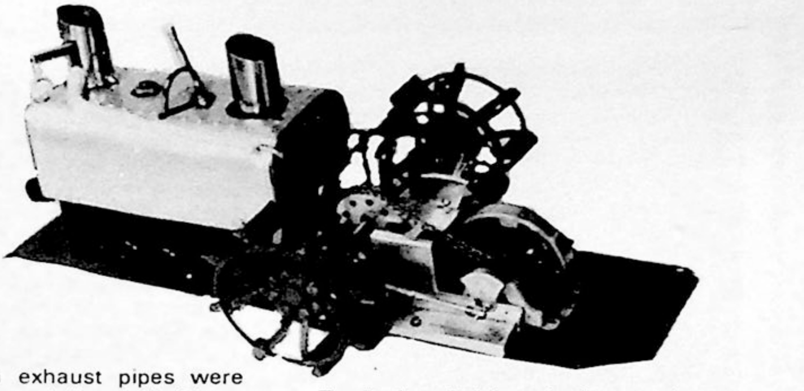
On the 31st August 1967, Campbell's remaining paddle steamer *Bristol Queen* was withdrawn from service and screw-driven vessels continue the services that holiday makers and ship lovers still enjoy.

The Model

My replica is *Britannia* in 1954 condition, the model is built to a scale of $^3/_{16}$in. to a foot giving a hull of 43in. by 5in. beam and weighs 9.5lb. less fuel and feed water. Hull construction is of balsa but it is longer than the standard length of balsa sheets; no problem in shipbuilding as the materials are never as long as the ship, but a bit of a snag in model making. So the hull is built to a system of a 3/8in. thick sheet bottom made up from five pieces with butted joints and the hull sides in four pieces at 3/32in. thick, with a vertical joint under the paddle boxes on the shaft line, strengthened with an internal sheet 'doubler'.

The steam plant is a Mamod SE.3 horizontal twin cylinder oscillating engine converted in-line. With limited engineering facilities it was the obvious choice. In the 1850s seven Clyde steamers had oscillating engines (*The Lord of the Isles*, being a notable example). It was the nearest approach I could offer to the inclined engine of the *Britannia*.

After cutting the baseplate to leave a narrow strip either side of the boiler the remaining portion supporting the engine was carefully turned around until the base pieces could be bolted together end to end, taking care not to kink or fracture the steam feed pipe. The original exhaust steam chimney was cut to make two flue stubs, one in its proper socket — the other screwed to an alloy sheet boiler casing and situated at the opposite end to the original.



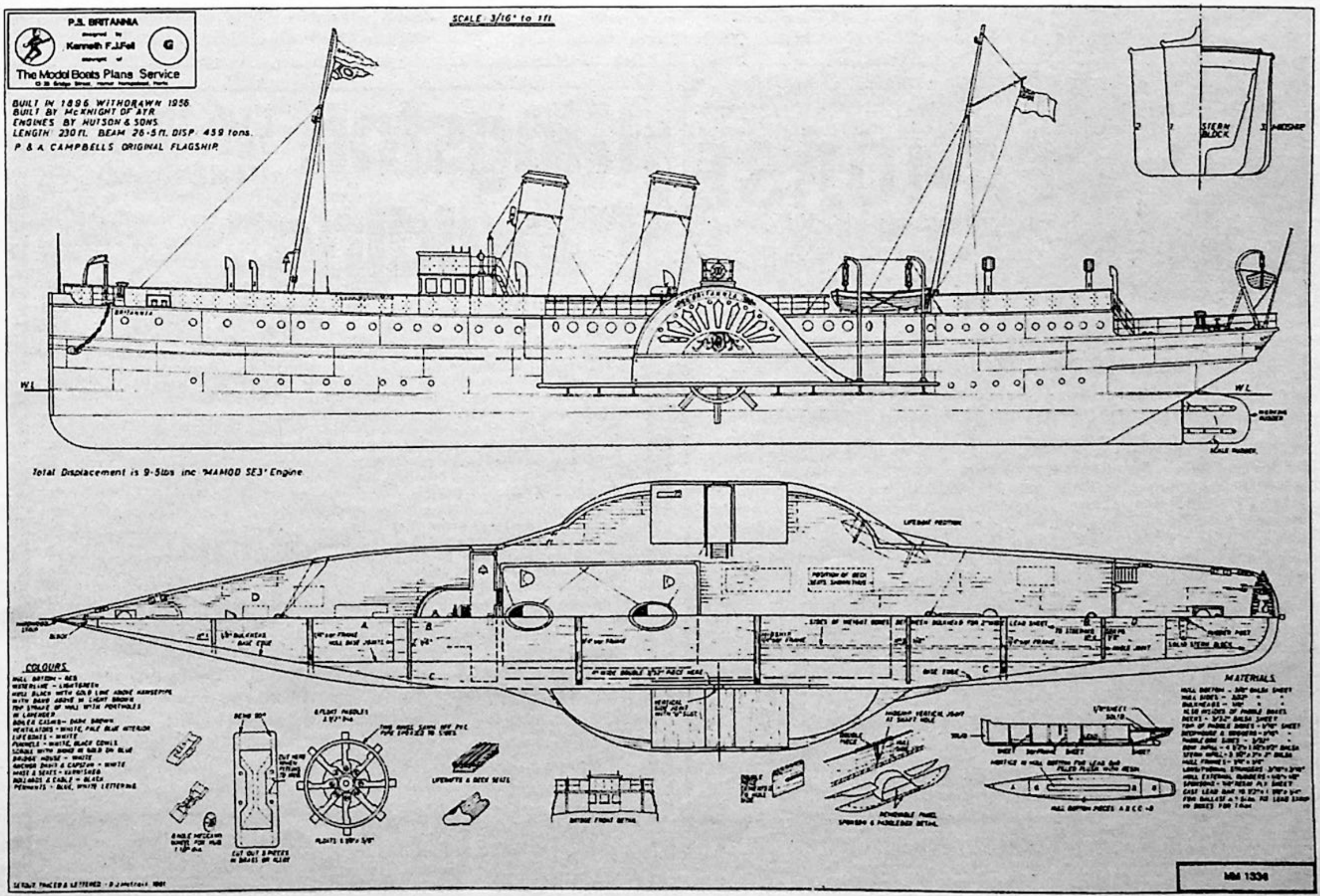
The modified Mamod SE3 horizontal twin oscillating engine converted in-line.

The copper steam exhaust pipes were positioned one into each flue stub. These tubes are annealed or soft copper pipe and it is not as difficult as it sounds.

The boiler casing formed to enclose the boiler top was secured to the firebox by four small self-tapping screws leaving about 1/4in. air space over the crown of the boiler. A hole was drilled in the casing at 1/2in. dia. to exhaust burner gases from the additional flue stub. For safety valve access a similar sized hole was cut and a slot made for the steam control valve. As my conversion was intended to represent a double-ended boiler the further the two flues (and eventually the funnels) were apart the more accurate the simulation would be.

To obtain suitable reduction gearing two Meccano sprockets and a length of sprocket chain to suit, were purchased. The small wheel having eight teeth was secured on the engine shaft next to the flywheel and a 31-tooth wheel was mounted on a seven and a half inch Meccano shaft. This is attached to the engine baseplate at the required height by two brackets bolted to the outer holes on the sides of the baseplate. From this a paddle shaft reduction of one to 3.875 revolutions is made. The engine runs on 'dry' steam or is superheated by the normal method of passing the steam pipe through the burner flame.

Full size plans for P.S. Britannia, hull length 43in. by 5in. beam are available from Model Boats Plans Service, P.O. Box 35, Bridge Street, Hemel Hempstead, Herts., HP1 1EE. Please quote Plan MM 1336 when ordering, price code G, £3.60, plus 95p postage and packing.



P.S. BRITANNIA
Kenneth F.J.Fell
G
The Model Boats Plans Service
SCALE 3/16" to 1ft
BUILT IN 1896 WITHDRAWN 1956
BUILT BY McKNIGHT OF AYR
ENGINES BY HUTSON & SONS
LENGTH 230ft. BEAM 26·5ft. DISP. 459 tons.
P & A CAMPBELLS ORIGINAL FLAGSHIP
STERN BLOCK
MIDSHIP
WL
WL
Total Displacement is 9·5lbs inc 'MAMOD SE3' Engine
COLOURS
HULL BOTTOM - RED
WATERLINE - LIGHT GREEN
HULL BLACK WITH GOLD LINE ABOVE HAWSEPIPE
WITH BAND ABOVE IN LIGHT BROWN
TOP STRAKE OF HULL WITH PORTHOLES
IN LAVENDER
BOILER CASING - DARK BROWN
VENTILATORS - WHITE, PALE BLUE INTERIOR
LIFEBOATS - WHITE
FUNNELS - WHITE, BLACK COWLS
BRIDGE HOUSE - WHITE
ANCHOR DAVIT & CAPSTAN - WHITE
MAST & SEATS - VARNISHED
BOLLARDS & CABLE - BLACK
PENNANTS - BLUE, WHITE LETTERING
A
B
C
D
MATERIALS
CUT OUT 3 PIECES IN BRASS OR ALLOY
MM 1336

At this point I would stress that for any potential paddle steamer, builder's general model stability considerations 'go out of the window', certainly with steam driven models. There is the additional weight on the beam ends of the paddles, paddleboxes and sponsons, also the athwartship weight of the paddleshaft, not to mention several other considerations which soon became apparent. The eight float paddle wheels were made from alloy sheet to keep their weight down and the rims of the wheels were formed by affixing a thin ring of 3in. dia. PVC pipe to either side with epoxy adhesive. I would have preferred the wheel hubs to have been lighter than the Meccano eight hole wheels used but here strength is essential.

Hull construction in balsa is commonplace now, using 1/8in. sheet bulkheads, 1/4in. sq. longitudinal stringers with hull sides of 3/32in. sheet, plated above the water line with thin cardboard strakes. Weight boxes were formed between the bulkheads internally on the centreline for sheet lead for trim adjustment, but the bottom of the hull was also carefully cut out externally to a shallow mortice at a 1/4in. depth, 1 1/8in. width and 15 1/2in. long on the centreline to accept a cast strip of lead ballast which weighs 1 1/2lb. This was filled flush to the hull bottom with (fibreglass) resin. Radio and machinery installation presented no problems, and when decking in, the hull access was cut to embrace all the superstructure.

To construct two identical tall funnels of distinctive appearance with cowls, etc., two small aerosols of the unseamed extruded aluminium type were used. The cowls, hoops and stay eyes were all fixed with Loctite glue. The masts were fashioned from split cane for strength and lightness. Deck seats were carved from balsa block and thin strips of mahogany were cemented on them at regular intervals to represent seat battens. Commercial metal handrailing was used only where essential around the counter stern and on the docking bridges over the paddleboxes. These rails were capped with a hardwood taffrail. Elsewhere around the deck it was possible to use square strip balsa stanchions covered externally with 1/16th sheet, finished pale grey matt to represent canvas dodgers, also capped with a taffrail. This was typical of the many photographs of this vessel in service.

Sailing

Eventually the long awaited day of the maiden voyage arrived. There were no problems with the steam plant as it had been run several times in the modellers graving dock (the bath) long before arrival at the pond. The steam engine has ample power and due to the large safety valve and boiler size can be filled to the correct level without independent venting.

Britannia was launched on water rippled by a light breeze with puffs of steam trailing from both funnels. On half throttle the pace was quite lively but on extreme rudder downwind the turn was slow. Turning into the wind could not be executed, with the rudder hard over the wash of the paddles and the breeze she held on a straight course. Back to the workbench, lesson learned! It takes a great deal more to turn a paddledriven model having no screw wash or thrust on the rudder surface.

A new rudder was made up at approximately one and a half times the scale area, the increase being mostly in blade length rather than depth. The rudder when fitted was given three coats of red 'oxide' cellulose primer similar to the hull bottom. The appearance of the rudder modification is quite acceptable and in the water the model responded beautifully with close turns to port or starboard at will. The model steams for just over half an hour before refuelling. On reflection if it were powered by an electric motor the installation would have been easier but to me the realism would have suffered greatly, but it's a modeller's choice of course.

Under way the sound of the paddle-beat is quite distinct and the widespread wake which is unique to paddle steamers is very much in evidence. *Britannia* is now well known in a park at the resort where the real ship berthed regularly.

SEAHORSE
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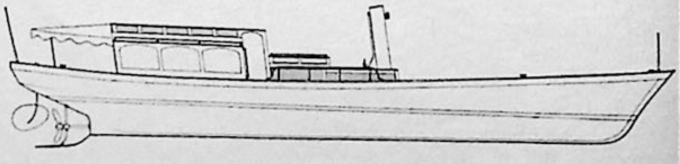

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JIM KING

† With very great regret we have to announce the passing of a dear friend and colleague, Jim King. There can be very few model boaters and model engineers who did not know Jim, either personally or through his written words in the MPBA, Naviga and the modelling press.

For over 30 years he served the model boat fraternity, always aiming to further the cause of all types of model boating, nationally and internationally, without bias to any group, regardless of personal opinions at times.

He served as MPBA General Secretary, Assistant Secretary, International Secretary and recently was the MPBA's Naviga representative. His own boating always took second place to organisation and administration, and during his guidance from 1955 onwards much of the MPBA's progress has been due to his drive and enthusiasm.

In the 1930s Jim was keen on, and successful at, road and track cycle racing. He built his first models, an aircraft and an O gauge locomotive, in 1928, and since then was very active with model boats and live steam locomotives, plus interests in still and cine photography, railways and shipping, American riverboats and collecting stamps featuring ships.

Jim's working life was spent in the Post Office and immediately following his retirement as Executive Engineer, Telecommunications, in 1975, it was typical of the man that he spent the first six months of his retirement in masterminding the best European Naviga Championships ever, at Welwyn Garden City, in August of that year.

Immediately after this he was snapped up by Model and Allied Publications to take over the organisation of the Model Engineer Exhibition. This task would have daunted many a younger man, but 'King' Jim as he was affectionately known to his many friends, took it all in his stride. During this period, he suffered a major operation, moved house, continued Naviga and MPBA business *and* managed to write a new monthly column on steam boats for *Model Boats*; in addition to his regular monthly MPBA news slot which has been published for over 13 years.

Apart from all this he was involved with the popular Modellers' Holiday Festivals, and acted as Chief Judge at events in many parts of the world as well as at home.

Jim's second retirement, in 1978, left a little room to pursue his enormous range of activities, particularly his ambition to see Naviga blossom into a world-wide organisation. This has now happened and due recognition of Jim's very important role in helping to bring harmony to Naviga was reflected at Duisberg in 1979 when he was elected as one of the two Vice-Presidents of Naviga — a very high honour.

He will be enormously missed throughout the entire world of modelling and his thousands of friends and acquaintances will mourn the passing of this most likeable and enthusiastic man. The sympathy of us all is extended to his family.

A TRIBUTE FROM M.P.B.A. PRESIDENT, FRANK BRADBURY

May I, as President and friend, express to Jim's wife and family our sincerest condolences.

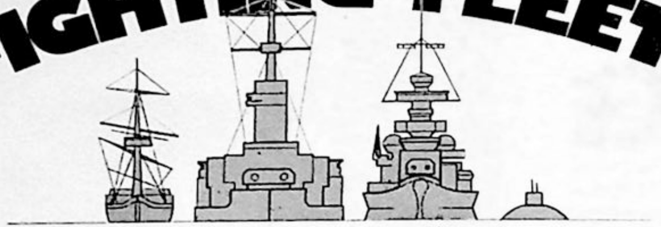
As far as the MPBA is concerned we know we have sustained our gravest loss since the association was formed. He had held many offices but I consider his shining hour was when, as secretary, he helped formulate the areas and so brought us all closer together into the association as we know it today. I think we all realise that his greatest honour was when he was elected Vice-President of Naviga. This world association, mainly, in my view, owes its success to Jim and his untiring work.

He was what I would call the Senior Statesman and Councillor, and I know that many Executive decisions, without his guidance, would have been less than successful.

Besides considering Jim one of my best friends, he has been a friend to all our members. I say this as Jim had only one thought in his deliberations and dealings in association business, and that was that the benefits of the majority of the members came first. His particular personal interest in model boating was never foremost in his official dealings. All aspects of our hobby were considered equally. In fact his own pursuits were neglected to a great extent in order to help others.

To sum up, I would say that we all will be poorer with Jim's passing. For me, he will be irreplaceable to the MPBA.

FIGHTING FLEETS in miniature



No. 197
H.M.S. Hermes

by
Michael Ainsworth

WHILE the name *Hermes* is more likely to bring to mind the flagship of the Falklands Task Force, her immediate predecessor has an equally important place in history. As with her more modern namesake she was an aircraft carrier; a true pioneer for she was the first vessel to be designed from the keel up for this role. All previous aircraft carriers had been converted from other types; ocean liners, cross channel steamers, and even a battle cruiser.

The first attempts at flying off aircraft from ships at sea took place before World War 1. There were no catapults then and the flimsy planes had to rely on the power of their engines, coupled with the wind generated by the forward movement of the ship, to get themselves airborne from rudimentary ramps. As aircraft became heavier, however, and particularly if they were to carry bombs or torpedoes, a longer run was needed to get into the air. There was also the question of recovery. Unless the plane was fitted with floats, so that it could land on the water near the parent ship, the only haven once its mission was complete was a shore-based airfield. The largest British carrier to see service in World War 1 was *HMS Furious*. Designed as a light battle cruiser with two 18in. guns in single turrets fore and aft, she was completed with a flying-off deck in place of her forward turret. In November 1917, after only a few month's service, the after turret was removed and replaced by a landing-on deck. Between these two decks rose a formidable obstacle in the form of her funnel and bridge. She nevertheless performed valuable service as an operational carrier in this guise, as well as providing experience in aircraft operation at sea. In September 1918, only two months before war's end, another carrier, converted from the incomplete hull of the Italian liner *Conte Rosso*, joined the fleet. *Argus* was the first carrier to be built with an unobstructed flight deck, and she set the trend for all that followed.

The problem of providing an unobstructed flight deck and, at the same time, a bridge structure from which to con the ship and direct flying operations was only partially solved in *Argus* by making the latter retractable. The Admiralty had, however, embarked on further carrier construction purchasing the incomplete hull of the Chilean battleship *Almirante Cochrane* in 1917, and laying down the first ship ever to be designed from the keel up as an aircraft carrier in January 1918. The first of these was appropriately named *Eagle* and will be the subject of a future article. The second ship was christened *Hermes*, perpetuating the name of a cruiser from which early flights had been made. In both these ships the boiler uptakes and superstructures were offset to starboard, a layout which was to be followed by the majority of aircraft carriers subsequently built.

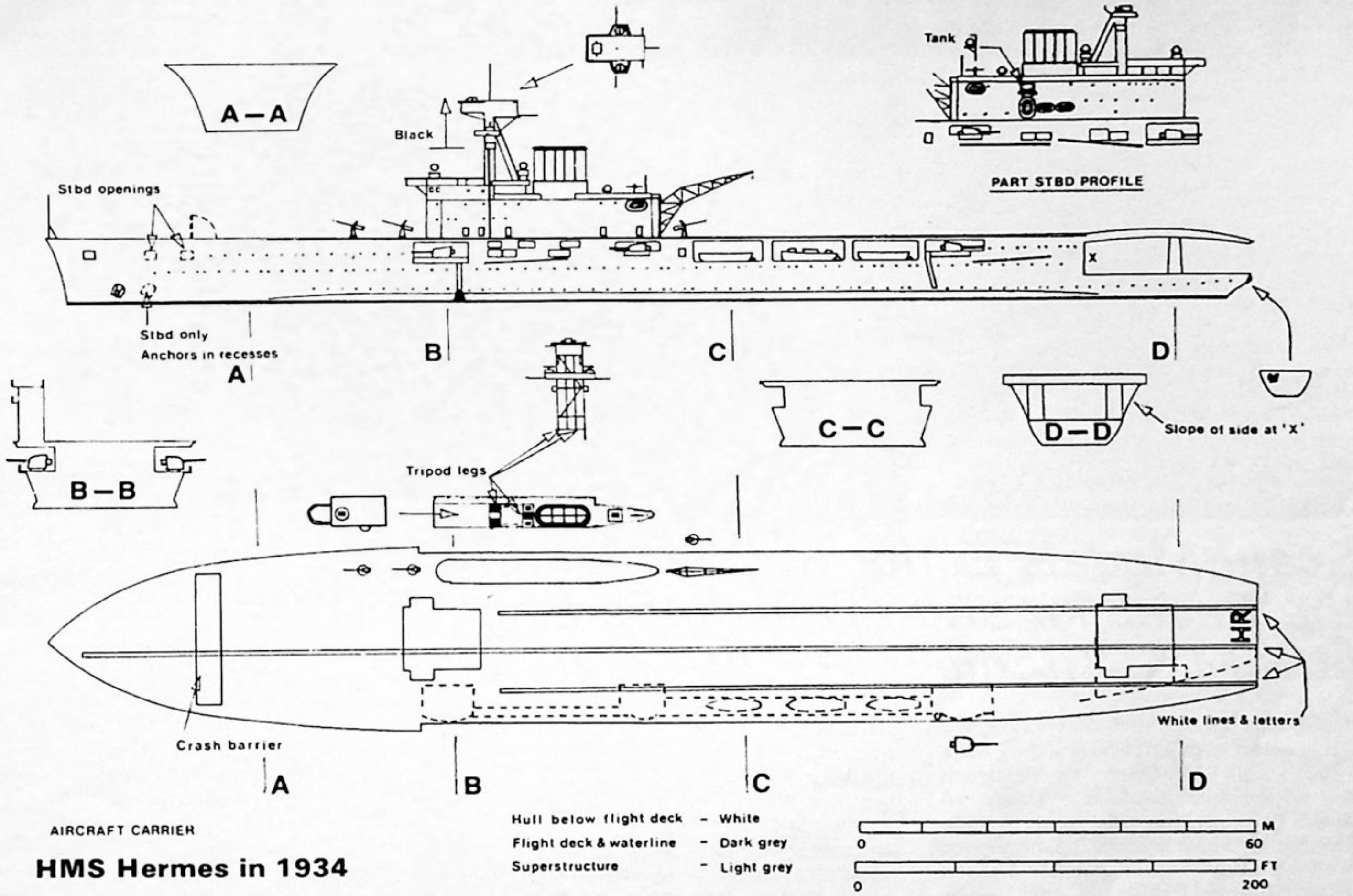
Hermes was launched in September 1919, almost a year after the Armistice, and, with the urgency of wartime no longer a factor, her completion was delayed while further experimentation continued with the carriers already in service, notably *Furious* and *Argus*. She had been laid down by Armstrongs on the Tyne but, after launching, the incomplete hull was towed to Devonport Dockyard. There she was finally completed in July 1923.

By later standards *Hermes* was not particularly effective as a fleet carrier. She was comparatively slow, only 25 knots, and her complement of aircraft was small, 15. She would, perhaps, have been very effective as an escort carrier, but was never used in that role. Prior to 1939 she was employed almost exclusively on the China Station, with breaks for refits in 1927 and 1933. Designed more for North Sea operations than for the tropics *Hermes* proved to be a hot ship in China. In the days before air-conditioning became standard practice the only remedy was the white livery used by ships on that station, even so *Hermes* had a dark grey flight deck and that must have made it very oppressive below decks particularly since she could not, as could other ships, rig awnings to shield the deck from the sun.

Hermes, despite all her drawbacks, provided invaluable experience in carrier operations, an experience that was to be built into *Ark Royal, Illustrious* and other famous wartime carriers. She was back in home waters when World War 2 began in September 1939 and spent the first months of the war in the Atlantic searching for enemy raiders. Early in 1940 she was transferred to the South Atlantic and was one of the ships that took part in the abortive British-Free French attack on Dakar. A motor boat from *Hermes* penetrated the defences and placed four depth charges under the stern of the French battleship *Richelieu*. The exploit was no more successful than the rest of the operation as the depth charges all failed to explode. A few days later, while the Allied force was withdrawing, *Hermes* collided with an armed merchant cruiser and was badly damaged. After temporary repairs at Freetown she went to Simonstown, a British naval base in South Africa, and underwent a repair and refit that lasted four months.

1941 found *Hermes* operating in the Indian Ocean and Red Sea where her aircraft were used to hunt down Italian and German ships using Italian East African ports. In co-operation with surface warships these activities proved very successful as nearly all the enemy ships in the area were eventually accounted for. In April *Hermes* went to the Persian Gulf where her aircraft assisted British ground forces in the short, sharp war that preceded the British wartime occupation of Iraq.

With Japan's entry into the war at the end of 1941 *Hermes* was sent to Ceylon to join the warships gathered there to counter the Japanese threat. The blow came in April 1942. A huge Japanese task force comprising five fleet carriers, four battleships, one light carrier, nine cruisers and accompanying destroyers entered the Bay of Bengal and was located by British aircraft on 4 April. The C-in-C Eastern Fleet, Admiral Somerville was able to pull out of his bases before the Japanese arrival but some ships had been detached, notably the heavy cruisers *Cornwall* and *Dorsetshire* sent to Colombo, and *Hermes* with the destroyer *Vampire* to Trincolmolee. Upon receiving word of the Japanese approach, however, these ships all sailed. The two cruisers were spotted by Japanese aircraft



AIRCRAFT CARRIER

HMS Hermes in 1934

Hull below flight deck – White
Flight deck & waterline – Dark grey
Superstructure – Light grey

and were soon overwhelmed by attacks from some 53 Japanese bombers. Four days later British planes again spotted a Japanese fleet approaching and *Hermes*, back in Trincomolee, once more put to sea to avoid attack. She shared the same fate as the cruisers. Spotted by Japanese planes she, and the destroyer *Vampire*, were overwhelmed by about eighty dive bombers. A corvette and two tankers were also sunk before the Japanese withdrew from the Indian Ocean. In all the Japanese force had sunk two heavy cruisers, the carrier *Hermes*, a destroyer, a corvette, an auxiliary cruiser, and 23 merchant ships. Japanese losses were only a few aircraft. Two months later came the Japanese defeat at the Battle of Midway. The Imperial Navy was never again able to mount a similar sortie into the Indian Ocean.

As with her contemporaries, *Argus* and *Eagle*, *Hermes* had her flight deck coming to a point at the stem. Later carriers, such as the converted battle cruisers *Furious*, *Courageous* and *Glorious*, had rounded fronts, while *Ark Royal* of 1938, and subsequent carriers, had a squared-off deck. *Hermes* was probably unique in having a pronounced 'hump' at the stern. There were no arrester wires across the deck but there was a crash barrier at the forward end of the flight deck. The cable deck, just below the flight deck, was covered in, but with square ports from which weighing the anchor could be supervised and the chain hosed of mud as it entered the hawse hole. Unlike most other carriers port and starboard sides were almost identical below the deck line. The few additional openings on the port side are shown on the plan.

Particulars of *Hermes* were as follows:

Built:	Laid down at Armstrongs on the Tyne 15 Jan 1918. Launched 11 Sep 1919. In Jan 1920 towed to Devonport Dockyard and completed there in Jul 1923.
Displacement:	10,850 tons (normal); 12,900 tons (full load).
Machinery:	40,000SHP = 25 knots.
Armament:	6-5.5 inch; 3-4 inch AA; several smaller guns.
Aircraft:	15.
Complement:	664.

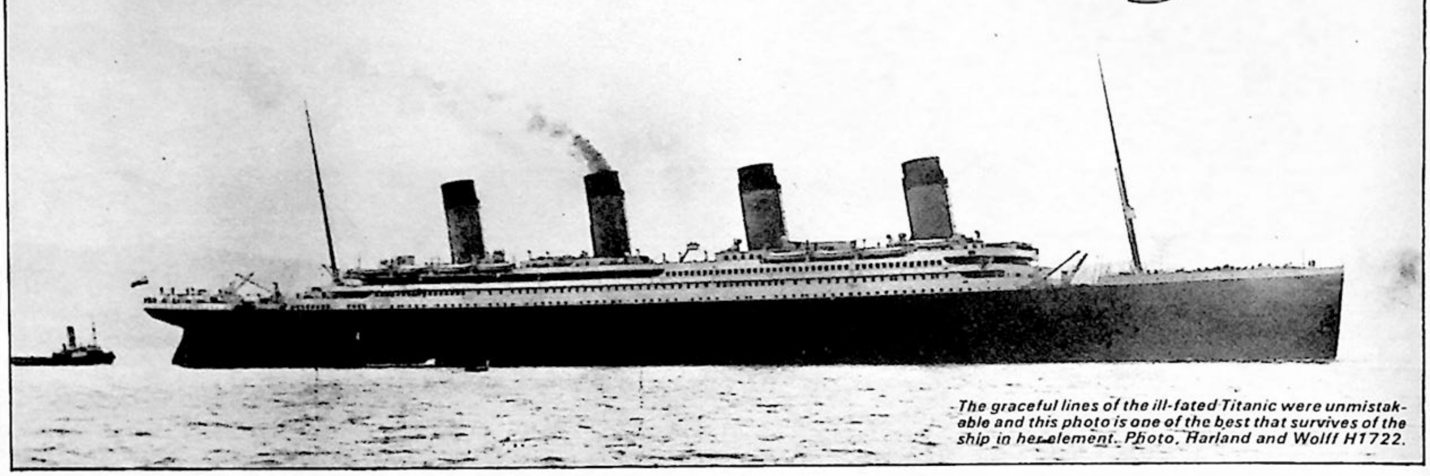
Other distinctive features include the massive tripod mast with its huge control top, the low freeboard aft with a peculiar cutaway stern, a very pronounced flare at the bow, and a widening of the flight deck ahead of the bridge structure.

Hermes is depicted as she appeared on China Station in the thirties. Her hull and all features below the flight deck were painted flat white. The flight deck was dark grey (*Humbrol* HN 2), while the superstructure was light grey (6 parts white to 1 part black). Lines on the deck were white as were the letters HR at the stern. Control top and tripod above the level of the funnel top were black, while waterline was dark grey.

Modelling Hint: (the first of a series): If flat paint dries with a patchy or glossy finish a wash of diluted white glue will give a uniform flat appearance. The brush must be well-rinsed with water after use.

NEXT MONTH: *USS North Carolina* — Battleship of World War 2.

The Titanic Sails Again



The graceful lines of the ill-fated Titanic were unmistakable and this photo is one of the best that survives of the ship in her element. Photo, Harland and Wolff H1722.

Scale Models Editor Ray Rimell builds the Revell kit and reviews the tragic history of R.M.S. Titanic – seventy years on

IT was way back in 1976 that I presented a three-part in-depth review of the **Entex** 1/350th scale RMS *Titanic*, a model which soon established itself as a plastic kit classic. Certainly, the articles which were published in *Scale Models* remain among the most popular ever published. Even today, six years later, we still receive requests for back numbers (long since exhausted) and photostats. It is this constant demand, and recent re-release of the kit by **Revell**, that has prompted me to revise the text and provide additional photos for *Model Boats* in a revised four-part article on the *Titanic* herself and building the large-scale models.

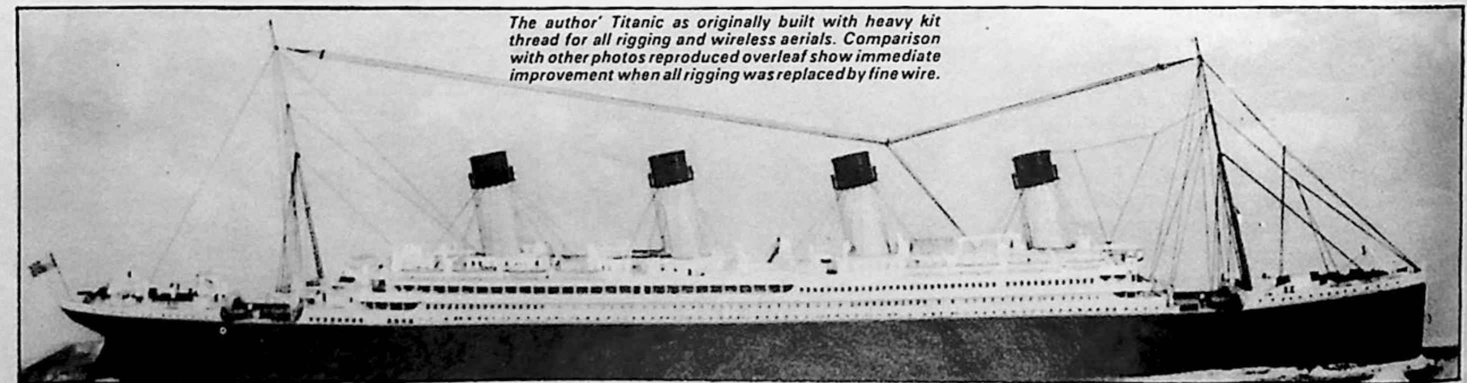
The Kit

Comparison with the original **A. A. Hales**-imported version with the **Revell** re-issue shows several minor differences. Most noticeable is **Revell's** simplified (and thus less interesting) instruction leaflet. Gone is the historical data and part identification — only the keyed numbers and multi-lingual annotations adorn the exploded drawings. It was also noted that all the major components (on our sample anyway) were badly warped and you can anticipate problems in assembly if your particular kit suffers these irritations.

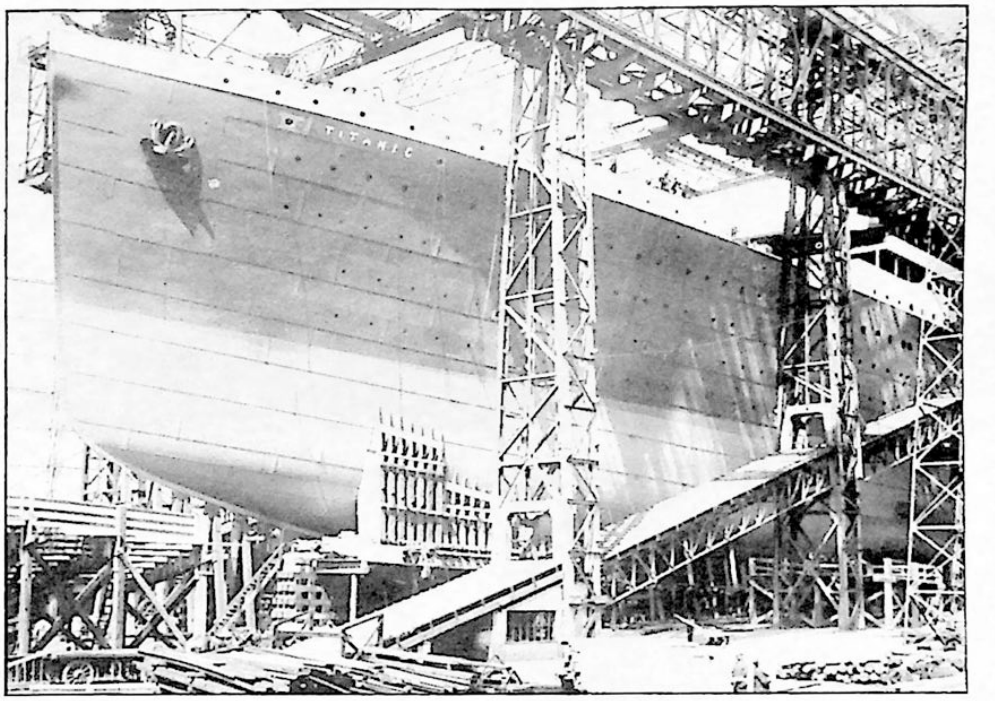
There are over 450 parts moulded in black, white, brown, tan and transparent plastic, the plated parts of the original kit now presented as transparencies. Most impressive of all the mouldings must be the huge 77.5cm long hull — in one piece — which is marred only by over-excessive plating and panel lines.

Eight sprue trees contain a mass of highly detailed parts, whilst larger components, deck walls, etc., are separate and bagged individually. Such items as railings, stanchions, and ladders are also supplied although as one might expect, these are all rather overscale and beg for replacement yet they illustrate just how complete the kit is. As well as main parts, other items supplied include 'copper(!)' anchor chains, rigging thread, flags, decals and a base complete with separate nameplate.

Comparison of the completed model with original *Titanic* photos (all the original drawings were destroyed in the last war) reveals that the kit is extremely accurate. The model was originally produced with the close co-operation of the US *Titanic Historical Society* and **Entex** produced the kit to fulfil the demands made by many American modellers. The original manufacturers took over two years of research and design before the model was released, and over the months following its appearance in the hobby shops, the moulds were altered and corrected to improve the kit further. Even so, like any other plastic ship kit, there is always room for improvement and the **Entex/Revell**



The author' Titanic as originally built with heavy kit thread for all rigging and wireless aerials. Comparison with other photos reproduced overleaf show immediate improvement when all rigging was replaced by fine wire.



Titanic is no exception.

Without a doubt, the *Titanic* is one of the world's most famous ships and its fateful history continues to fascinate succeeding generations. Before we start to tackle the model let's go back in time, turning the clock back 70 years . . .

The Maiden Voyage

11.40 p.m. April 14, 1912

Just a small bump - "an unpleasant ripping sound - like someone tearing a long, long strip of Calico". "A sort of rumbling, scraping noise . . . as though somebody had drawn a giant finger along the side of the ship". Frederick Fleet, one of the two crow's nests lookouts considered it a very close shave indeed.

But for the *Titanic*'s firemen in the forward boiler room, it was more than a 'close shave'. In No. 6 boiler room, the icy water was gushing through the buckled plates, while in No. 3, it was pouring through tons of bunkered coal — the starboard plates gave way completely. Way up on the *Titanic*'s bridge, First Officer William M. Murdoch had already ordered 'hard-a-port' and 'engine full astern' but it was too late — the damage was done. Captain Edward J. Smith joined Murdoch on the bridge; there was a brief exchange:

"Mr. Murdoch, what was that?"

"An iceberg, sir."

And so it was that the 46328 ton *Titanic*, the latest addition to the White Star fleet, collided with an iceberg which ripped a 300ft. gash below the waterline. The result was that six of the *Titanic*'s 16 watertight compartments were holed — two compartments too many . . .

At 2.20 a.m. on Monday, April 15, barely two and a half hours after she struck the iceberg, the biggest, most luxurious passenger liner the world had ever known, slid to the bottom, taking over 1600 passengers and crew with her. The ice-cold sea into which the *Titanic* plunged was as calm as a millpond, there was not a breath of wind, there was no moon; instead myriads of bright, shining stars sprinkled across the cloudless sky as the 'unsinkable' sank. A few of the lifeboats that had been launched from the doomed vessel, were rowed back to pick up some of the struggling unfortunates in the water, but other survivors ignored the cries of the drowning — fearing that the weight of extra passengers would swamp the already overcrowded boats — and rowed on. The 711 survivors were eventually picked up at dawn by the Cunarder SS *Carpathia*, the nearest ship to receive, and act upon, the SOS distress calls.

* * *

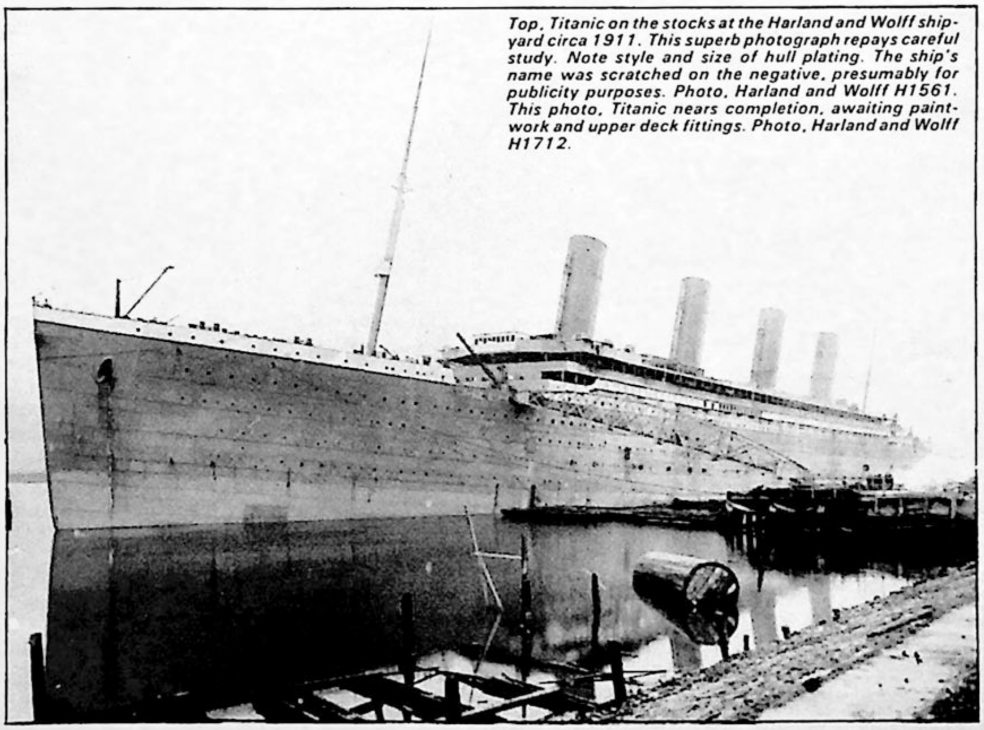
. . ."For three hours we heard cries and at last the Titanic sank. Her stern went up slowly (sic) 'till it was straight on end; there was a crash of machinery falling through her. She remained so for five minutes and then gently slipped beneath the surface of the sea - whilst there arose an appalling sound - the death cries of hundreds . . . "

A *Titanic* survivor.

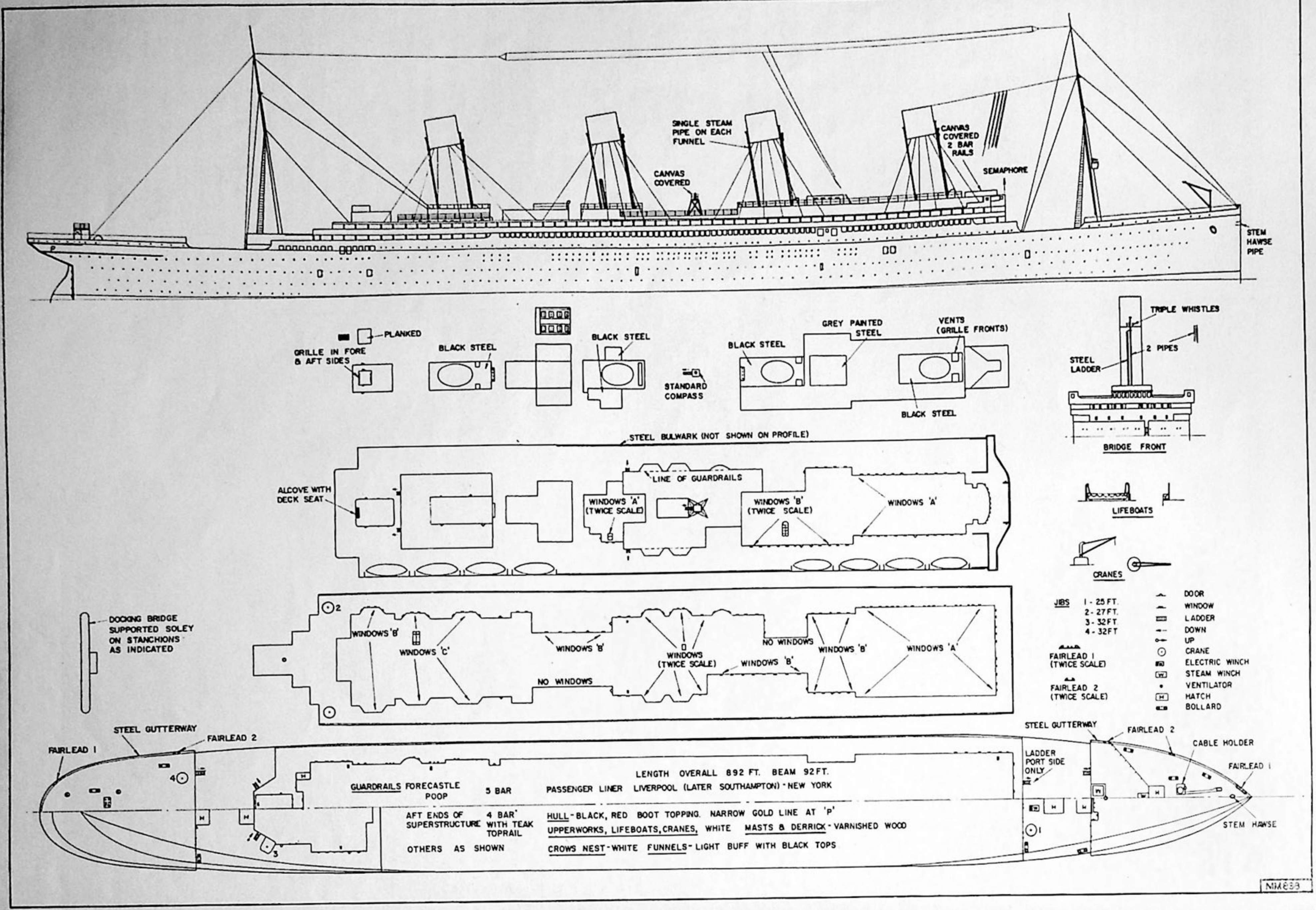
* * *

When the tragic news broke to a stunned world, there was tremendous hostility shown towards the White Star line from relatives and newspaper leader writers. The American Press attacked the British Board of Trade over the number of lifeboats aboard, for although the *Titanic* carried 2346 passengers and crew, lifeboat capacity was revealed to be sufficient for less than half that number . . .

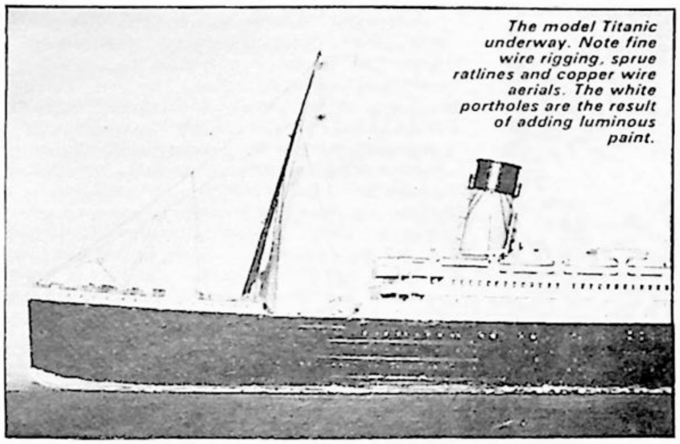
The world's press also had a ready-made scapegoat in the form of one survivor, Mr. Bruce Ismay, managing director of the White Star line. The American Board of Enquiry charged the *Titanic's* owners with negligence, for ignoring iceberg warning, and failure by the crew to inform the passengers of the true situation following the collision. The Captain of the *Californian,* Stanley Lord, was also criticised for not coming to the *Titanic*'s



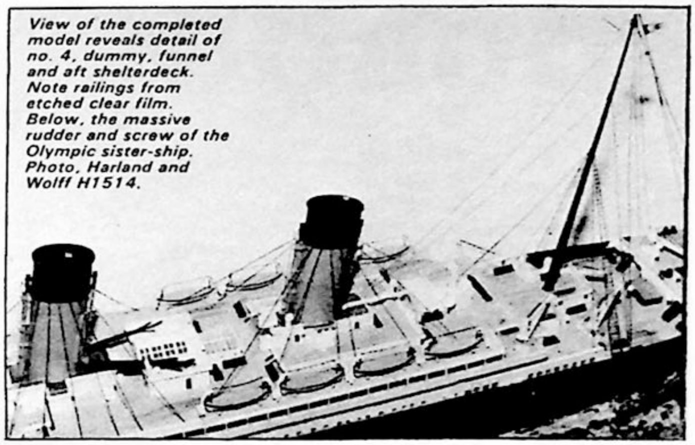
Top, Titanic on the stocks at the Harland and Wolff shipyard circa 1911. This superb photograph repays careful study. Note style and size of hull plating. The ship's name was scratched on the negative, presumably for publicity purposes. Photo, Harland and Wolff H1561. This photo, Titanic nears completion, awaiting paintwork and upper deck fittings. Photo, Harland and Wolff H1712.


STEM HAWSE PIPE
SINGLE STEAM PIPE ON EACH FUNNEL
CANVAS COVERED 2 BAR RAILS
CANVAS COVERED
SEMAPHORE
PLANKED
GRILLE IN FORE & AFT SIDES
BLACK STEEL
BLACK STEEL
STANDARD COMPASS
BLACK STEEL
GREY PAINTED STEEL
VENTS (GRILLE FRONTS)
BLACK STEEL
TRIPLE WHISTLES
2 PIPES
STEEL LADDER
BRIDGE FRONT
STEEL BULWARK (NOT SHOWN ON PROFILE)
ALCOVE WITH DECK SEAT
LINE OF GUARDRAILS
WINDOWS 'A' (TWICE SCALE)
WINDOWS 'B' (TWICE SCALE)
WINDOWS 'A'
LIFEBOATS
CRANES
DOCKING BRIDGE SUPPORTED SOLEY ON STANCHIONS AS INDICATED
2
WINDOWS 'B'
WINDOWS 'C'
WINDOWS 'B'
NO WINDOWS
WINDOWS (TWICE SCALE)
WINDOWS 'B'
NO WINDOWS
WINDOWS 'B'
WINDOWS 'A'
JIBS 1 - 25 FT.
2 - 27 FT.
3 - 32 FT
4 - 32 FT
FAIRLEAD 1 (TWICE SCALE)
FAIRLEAD 2 (TWICE SCALE)
DOOR
WINDOW
LADDER
DOWN
UP
CRANE
ELECTRIC WINCH
STEAM WINCH
VENTILATOR
HATCH
BOLLARD
FAIRLEAD 1
STEEL GUTTERWAY
FAIRLEAD 2
4
3
STEEL GUTTERWAY
FAIRLEAD 2
CABLE HOLDER
FAIRLEAD 1
LADDER PORT SIDE ONLY
1
STEM HAWSE
LENGTH OVERALL 892 FT. BEAM 92 FT.
PASSENGER LINER LIVERPOOL (LATER SOUTHAMPTON) - NEW YORK
GUARDRAILS FORECASTLE POOP 5 BAR
AFT ENDS OF SUPERSTRUCTURE 4 BAR WITH TEAK TOPRAIL
OTHERS AS SHOWN
HULL - BLACK, RED BOOT TOPPING. NARROW GOLD LINE AT 'P'
UPPERWORKS, LIFEBOATS, CRANES, WHITE MASTS & DERRICK - VARNISHED WOOD
CROWS NEST - WHITE FUNNELS - LIGHT BUFF WITH BLACK TOPS
NM 688

R.M.S. TITANIC DRAWINGS ARE REPRODUCED AT 1:1200 SCALE



The model Titanic underway. Note fine wire rigging, sprue ratlines and copper wire aerials. The white portholes are the result of adding luminous paint.



View of the completed model reveals detail of no. 4, dummy, funnel and aft shelterdeck. Note railings from etched clear film. Below, the massive rudder and screw of the Olympic sister-ship. Photo, Harland and Wolff H1514.

assistance, even though his own ship lay only ten miles away. Lord denied all charges levelled at him; even so, a few members of the *Californian*'s crew testified to seeing distress rockets and remarked that: "Her lights looked queer".

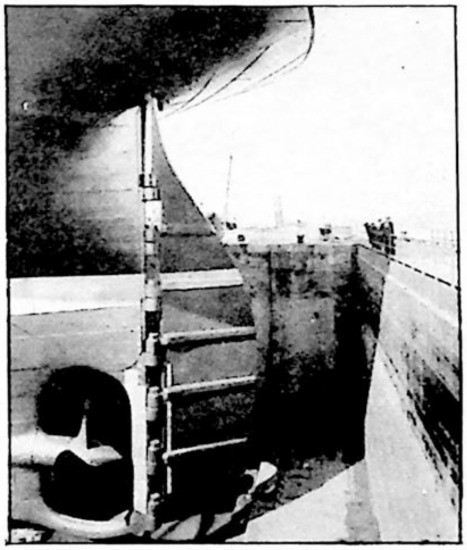
At the British inquiry, both Captain Smith, who went down with his ship, and the White Star line were completely exonerated. It was the British Board of Trade who were censured for retaining outdated regulations in regard to the number of lifeboats. The rules, drawn up in 1894, stated that 16 lifeboats were adequate for 'vessels over 1000 tons' — these rules were hopelessly outdated by 1912. Further criticism was levelled at the practice of maintaining a high speed through known ice fields, but then why shouldn't Captain Smith slice through the Atlantic at 22½ knots? After all, wasn't the *Titanic* supposed to be unsinkable?

* * *

. . . *"I cannot imagine any condition which would cause a ship to founder. I cannot conceive of any vital disaster happening to this vessel. Modern shipbuilding has gone beyond that"* . . .
Captain E. J. Smith – some years before the disaster.

* * *

One of the reasons for high speed crossing was in order to meet schedules. Ships had to arrive at their destinations on time or they could lose valuable business, and White Star had stiff competition in the shape of Cunard. The *Titanic* was also on her maiden voyage and it was doubly important that a record crossing be made. A rapid passage would doubtless impress the rich clientele aboard as the *Titanic*'s more important passenger boasted assets of a reported £120000000. Endorsements from such wealthy patrons would be invaluable for White Star, and no expense was spared in providing opulent quarters and dining areas for First and Second class passengers.



Although the *Titanic* had received ice field warnings as early as 9 a.m. on April 14, only a few of these messages reached the bridge. Indeed, the *Californian* sent a message barely hours before the collision but was curtly told to 'shut up' by one of the *Titanic*'s Marconi operators, who were working non-stop receiving congratulatory telegrams and sending personal messages to shore. However, Captain Smith was experienced a seaman enough to impress upon his two crow's nest lookouts, the need for constant vigilance.

The design of the *Titanic* was such that if four of her watertight compartments were breached she would remain afloat, but when the iceberg ripped through her plates the sea poured into six of those compartments and an irreversible chain of events was set off which could only have one result. Despite a total of 16 compartments, the remaining transverse bulkheads did not reach as far as the deck-heads and as each compartment flooded, it overflowed into the one behind it, and as the bow angle became more acute, the water flooded into the next compartment, and then the next, and the next . . .

Aboard the *Titanic*, Thomas Andrews, managing director of Harland and Wolff, the firm which had built the *Titanic*, surveyed the damage and he faced the inevitable truth — the ship could not live. Captain Smith conferred with Andrews following an inspection of the rising water level and ordered the lifeboats swung out and passengers to don life-preservers as a 'precautionary measure'. At this juncture there was a complete absence of panic or sense of impending danger. After the collision, most passengers returned to their card tables, retired to their cabins, listened to Wallace Hartley and his band playing ragtime, resumed drinking in the plush saloons or, if of sterner constitution, continued to take the cold night air. Some even played *impromptu* football with the large chunks of ice that had mysteriously appeared on the fo'c'sle deck.

But some time later, the lifeboats were ordered to be filled; 'women and children first' became the watchword, though many preferred the security of the *Titanic* and stayed aboard. The passengers' initial reaction to the Captain's 'precautions' had been one of surprise and few took matters seriously. But these feelings turned to genuine dismay as the first of the white distress rockets soared high over the brilliantly-lit decks, followed by another, and yet another . . .

(*To be continued*)

Footnote

Readers wishing to learn more about the *Titanic* are urged to join the following two societies in the USA. For more details, send a large self-addressed envelope with IMOs, to: *The Titanic Historical Society*, Post Office Box 53, Indian Orchard, Massachusetts 01151, USA, and Mr. Charles Ira Sachs, *Oceanic Navigation Research Society, Inc.* PO Box 8005, Universal City, California 91608, USA.

The author would like to thank the above societies for their continual help over the years with *Titanic* material. He is also grateful to Mr. A. Hedgeley of Harland and Wolff, Belfast, for originally supplying *Titanic/Olympic* prints which will accompany this series.

LOGBOOK

Model Yachting Association News

ALTHOUGH the IMYRU World Championships for RM and R10R classes will be over before this issue appears, it may be news to some readers that the organisers offered the MYA two extra places in each class, allowing 11 in RM and 7 in R10R. With 18 places available, nearly half of those who initially signified a wish to compete could have been accommodated, and it was the obvious excess of aspirants over available places which caused the MYA Council to decide that no one skipper could compete in both classes. Now, however, the interested parties have melted away and we are fielding one 11-strong team, all of whom are racing RMs and seven of whom will also be racing in the R10R class. The two extra places are being filled by the only two skippers who had asked to be placed on a list of reserves.

The team is (was!) J. Cleave, C. Dicks, M. Dicks, T. Fuller, D. Hackwood, B. Jackson, J. Lee, A. Owen, R. Potter, N. Wilder and C. Yabsley, which represents a pretty good spread over the country (on the north/south axis, at least) and includes several past World/National Championship winners and others with considerable experience of international events. It will all be history by the time this issue appears, and we should be able to include at least the major results next time.

1983 Regattas

Following the query on the 1983 A CLass championships at Fleetwod, the dates agreed are July 31-August 5.

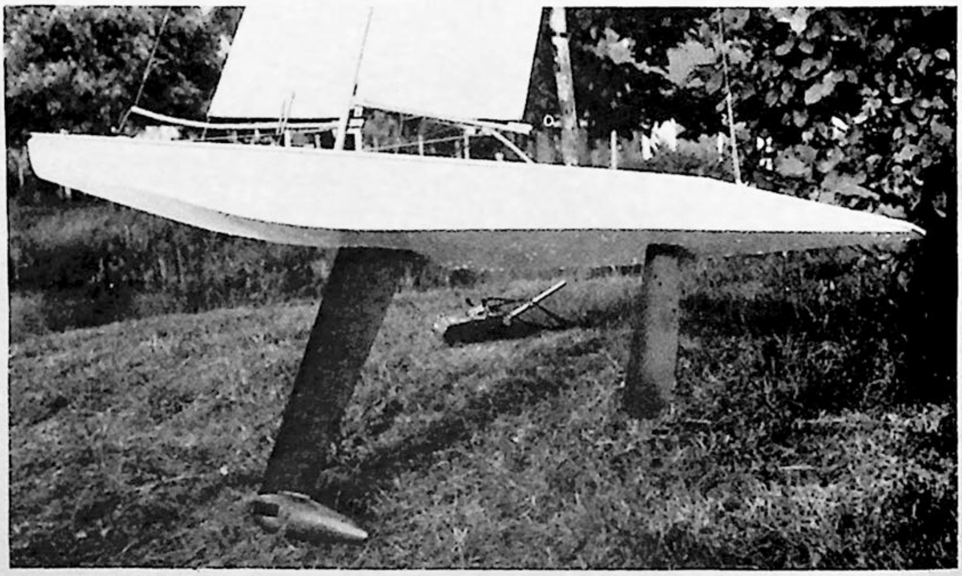
The possibility of an R36R championship mentioned by the Guildford club has been put in abeyance, since the club has been allocated the RA championship (September 17/18) and would not be able to arrange two major meetings in the same season. However, the idea has not been abandoned; perhaps 1984?

Club Waters

Let's start in the north again — **Cleveland MYC** who sail on Hemlington Lake on the N.E. side of Hemlington village. Starting from the junction of the A19 York-Newcastle road and the A174 Teesport, Redcar and Whitby, head east on the A174 from the roundabout at the junction, following the sign for these three towns, turn left off the A174 following Acklam, A1044 and keep left (following Stainton, Maltby, Yarm A1044) to cross back over the A174. Follow signs for Hemlington and 'Local Traffic' at the first roundabout, take the first left after the roundabout and second right takes you down to the clubhouse and lake, which is a large ex-gravel pit.

In the Midlands, **Leicester MYC** sail at Charnwood Water, on the S.E. edge of Loughborough. Leave the M1 at Junction 23 or 24 and head east to pick up the A6 Leicester/Derby road, which is called 'Leicester Road' heading roughly S.E. from the town centre. Opposite a school on the right turn left down Beeches Road and take the second right, Tuckers Road, to reach the water. The lake lies on the eastern side of the A6 directly opposite Loughborough Cemetery and Crematorium on the western side, but from this easily-found reference it is necessary to head towards the town centre(N.W.) when Beeches Road should be the third turning on the right, from the cemetery.

A slightly shortened version of Vic Smeed's 10-rater Spook, available from MAP plans, built by Norman Curtis, using 1/32nd ply on open frame construction.



Now to a south-western club, **Woodspring**, who sail mostly at Portishead, the lake being on the sea front (the sea being the Severn Estuary, of course). Head south on the M5 from the M4/M5 interchange, to Exit 19, and take the A369 sign-posted Portishead. After a small roundabout at the junction with the B3124 start looking for the 30mph limit sign and 200yds past this take the left turn marked 'Sea Front', then second right over the hill to bring you down to the lake. Car parking is usually no problem on the front and there is a cafe and toilets a few yards away. Club sailing in the season is usually on Sunday mornings, except for open races, since the lake is shared with pleasure boats. Waders are not necessary.

Veterans

The 'veteran' race, for pre-bulb vane Marbleheads, at the Jubilee Regatta at Fleetwood was well supported and enjoyed by participants and spectators alike. There was a certain amount of light-hearted clowning in the dress of some of the skippers (like Dick Seager sailing in a nightshirt and Wally Jones and Bill Poole in schoolboy/Wolf Cub caps) but the racing was taken quite seriously. Some skippers used modern sails and masthead spinnakers (instead of spinnakers to the 68in. limit which applied when these boats were current) but with the fluky wind, which sometimes started out as a beat and finished as a run or vice versa, big spinnakers were not always an advantage. The winner, *Lazy Devil*, originally designed and built by a very young Roger Stollery, used its old sails and spinnakers and was well sailed by Dick Seager, who dropped only one beat and a couple of runs.

An interesting aspect was that a good many vane boats were having a practice on the Saturday, including many of the modern Ms racing during the week, and it was noticeable that there was not a great deal of difference between old and new boats' performance to weather, although the modern yachts were markedly superior on the run.

New Boats

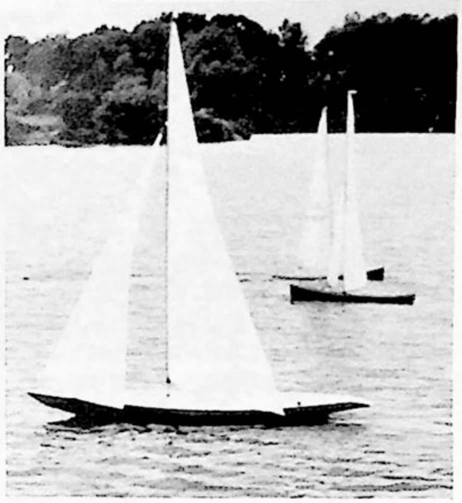
Following last year's 12 metre experiments, at least two of the designers concerned have recently launched new 12m yachts differing quite sharply from their 1981 models. One is Dick Priest, about whose yacht we have heard little except that it shows considerable promise, and the other known to us is Roger Stolley, whose new boat *Wake* was photographed at a recent informal meeting at Ash. This design, like last year's, is to the minimum waterline, giving it over 2½ thousand square inches of sail, but there the similarity ends, since this is the first deep-V hull Roger has ever designed. In the very light airs at the time, with occasional slightly stronger periods, the model moved effortlessly and has an incredibly clean wake with no hump left astern and no cross-hull 'boiling'. It will be interesting to see what the speed and wake are like in a stiffer blow.

Also on an early outing was Norman Curtis' *Spook*, the long thin boxy 10-rater published in February 1981 *M.B.* In order to get it in his car, Norman had closed the sections slightly, reducing the l.o.a. by 5 per cent and he had built it immaculately, using 1/32in. ply on open frames. It is a notably clean mover, not throwing any water about, and gives the impression that in any weight of wind it will slice along well. In the near-calm when it was sailed, a short waterline R10R sailed by an experienced skipper showed better acceleration, but the *Spook* was being controlled by one of the non-sailing visitors and comparative judgements were therefore not easy to make.

This particular fun meeting saw the 12m, the two R10Rs, several RMs, an R36R and a *Panache* all sailing well. When the 30in *Panache* was published eighteen months or so ago, incidentally, several people expressed interest in the idea of scaling it up to Marblehead size, and it may therefore be a thought to mention that an RM of similar style will be appearing as a short construction series in sister magazine *Radio Modeller*, starting in the October issue.

More on 12m

The Acorn Project 12m models and, of course, the two mentioned above are to 1/10th scale, which makes them fairly large models. However, such models have proved extremely popular in Sweden where, in a newsy letter from Jan Dejmo (leading light in the SMSF, now the accredited model yachting body for Sweden) no fewer than 98 have been registered in a little over a year.



In the foreground is the 12 metre design by Roger Stollery, called Wake, a deep-vee hull carrying over 2,500 sq. in. of sail.

Apparently two experimental divisions have been explored, one sticking to accurate scale draught and consequently requiring much reduced sail area in anything but light conditions, and the other employing a standard lead fin, increasing draught and allowing the full sail area to be carried for much longer. It has emerged that the scale-draught models do not look or sail like the fullsize craft, whereas those with the false keel do, and the reduced-sail division is therefore in the process of being dropped. The removal of the extra lead keel and its placing inside the hull without changing the plane of flotation allows the yachts to be measured as 1/10th scale versions of the fullsize rule.

So far the yachts have been scale models of fullsize designs, but the possibility of accepting freelance designs is being investigated. It appears that some additional restrictions may be necessary — like w.l. not less than 52¾in., sail area not less than 2,328sq. in. and not alllowing a draught penalty to be taken — in order to maintain the scale-type concept without undesirable model design characteristics creeping in.

Jan does not say how many or what prototypes are represented in the 98 registered yachts; the only one we have seen was the *Sverige* lent to Dave Hollom for the Acorn trials, and this was certainly an excellent boat. From an invitation to a Press function we received some months ago, there appears to be some commercial interest. It wasn't too clear, but seemed to suggest a travelling 'circus' of boats with people able to hire models to race, and franchises available for such commercial application in other countries. If this was indeed a correct interpretation, one can see that it might work in Sweden, with a small (though intensely boat-minded) population and thousands of lakes and other potential sailing sites. It might not, however, be greeted with unalloyed delight in more densely-populated countries where suitable sailing waters are at a premium and radio frequencies are fairly well occupied. At the time of the invitation we requested further information but so far nothing has arrived; if anything is forthcoming we'll keep readers in touch.

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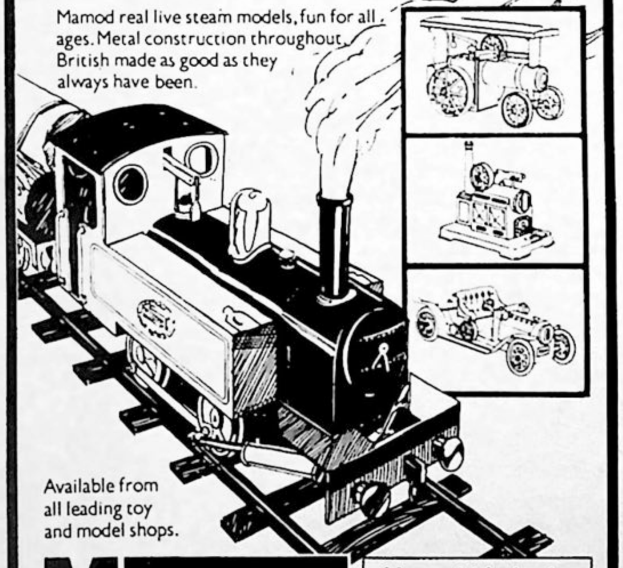

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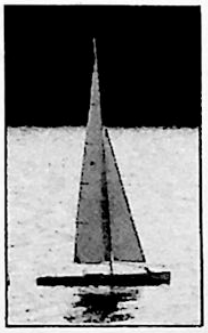

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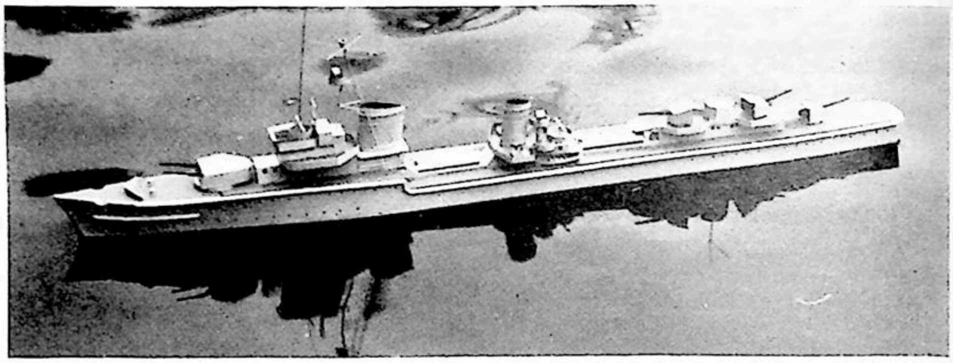
FULL SIZE PLANS FOR A STAND-OFF SCALE W.W.II GERMAN



Zerstorer

Designed by Glynn Guest

GERMAN warships of the Second World War Period are popular subjects for modellers. It is not difficult to see why — clipper stems, large funnel caps and powerful balanced profiles made for a handsome appearance. However, if students of naval history were to use models as a yardstick then they could conclude that the Kriegsmarine consisted almost entirely of capital ships such as *Bismarck* and *Tirpitz*. It is hoped that this model of a German destroyer, or Zerstorer in its native tongue, will redress this bias a little.

To compensate for a shortage of vessels, German destroyers were amongst the largest and most powerful in the world. The first 22 built (Z1-Z22) were armed with five 5in. guns in single mounts. The next 15 vessels mounted 5.9in. guns in one twin turret forward and three single mounts aft, except for Z28 which was equipped as a flotilla leader and carried four single mounts. The use of such a large gun produced a formidable warship which was comparable with light cruisers of twice its displacement. A price was paid for using the heavier guns, especially the bulky twin turret mounted on the raised forecastle deck, in reduced stability. When war experience dictated an increase in anti-aricraft armament a 5.9in. gun had to be removed and they ended up with no heavier broadside than the preceding 5in. armed ships.

The Model

The model is based upon the 5.9in. armed vessels since, in my eyes at least, they were the most distinctive and attractive. If you fancy alternative armaments then I suggest you consult Michael Ainsworth's 'Fighting Fleets No. 78' in the September 1972 issue for ideas.

An approximate scale of 1in. equals 12ft. (1/144th scale) was used to produce a model 33½in. in length and 3lb. displacement. This results in a handy size of model that can easily carry a two function radio outfit.

This model was not intended to be a highly detailed and accurate scale model. Indeed a deliberate attempt was made to keep the model as simple as possible since it was to be experimental, employing a twin screw and rudder arrangement. I hoped that manoeuvrability would be improved over the single screw and rudder set up I normally use. Even so the model captures the character of the original and makes an attractive 'Stand-Off Scale' model.

Construction

The model is made from balsa sheet and strip, the hull being basically a box section which tapers to form the bow and stern sections. Internal access is via two removable deck portions which allow plenty of room for poking about within the hull. Balsa cement was used on all the structural joints and proved most satisfactory.

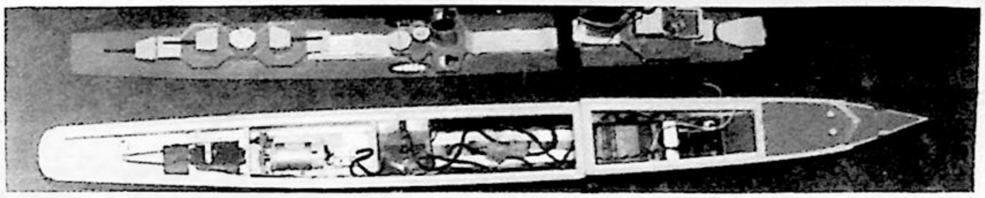
The Hull

The first stage of hull construction is to make the base from soft ¼in, sq. strips on the ¼in. sheet bottom. The bulkheads are fitted to the base taking care to pin them vertical until the cement sets. The two hull sides are cut from $\frac{3}{32}$in. sheet exactly as shown on the plan; the flare in the bows is produced by bulkheads 1 and 2 which also create the desired sheer on the forecastle deck. The sides are stuck to the base in two separate stages, initially between bulkheads 3 and 4 (i.e. the parallel part). Only when this is dry, the bow and stern, remembering to insert bulkhead 6, can be pulled together and well cemented. Pins and elastic bands can be supplemented by clothes pegs at the bows. It is also advisable to internally reinforce the bows, because that is usually the part you hit things with, and a cloth tape (ribbon) soaked in cement then pressed over the joint is ideal. The stern ¼in. bottom and corner strips can be added taking care to bevel the edge that mates with the main bottom sheet. The transom block, which can be laminated from spare ¼in. sheet, is stuck to bulkhead 6. The hull should be left for several hours before the next stage. Both hull openings are edged with ¼in. sq. strip which is set $\frac{3}{32}$in. below the top of the hull sides. This enables the removable decks to lie flush with the sides. Clothes pegs are ideal for holding this strip in place. The excess sheet can be roughly trimmed off the hull base before carving or planing the bilge curve onto the hull. The transom block requires carving to shape. The stem is reinforced with a hardwood strip, I still find lollypop sticks ideal for this bit, which is carved and sanded.

The fixed forecastle deck, from stem to bulkhead 2, is best fitted by a cut and try technique. Any small gaps at the deck/side joint can be fitted with cement, plastic wood or even Polyfilla. Strips of $\frac{3}{32}$in. sq. balsa are required around the top edge of the hull sides and where shown on the bows.

Don't ask me what these strips are supposed to represent but they are very prominent on the fullsize vessel and therefore ought to be fitted. Recesses for the anchors can be carved carefully into the edge of the forecastle deck or omitted if preferred. The hull should be sanded to a smooth finish and any blemishes rectified before fitting the propeller and rudder tubes. Single or twin screw and rudders can be used as is your preference, but the important thing is to ensure that they are accurately lined up otherwise the model will be fighting a permanent turning force whilst sailing. The prototype used two **Ripmax** propeller assemblies (1in. dia., 3 bladed propellers) of a type no longer available. Perhaps the best idea is to take the plan or even the hull, along to your local model shop and check what they can offer. Remember to ensure that sufficient space for the motor is left. The rudders can be small commercial items but the prototypes were simply made by sandwiching a rod between two epoxy coated pieces of thin plywood.

The outer surfaces of the hull can be primed at this stage. Sanding sealer, dope


Internals of Zerstorer: l to r., rudder servo, motor., speed board, Ni-Cads and receiver.

or undercoat can be used remembering that several thin coats, rubbing down between each, will produce a better finish than one or two heavy coats.

Deck and Superstructure

The removable decks are started by making ¼in. sq. strip plugs to match the hull openings. These are built 'in situ', i.e., within the ¼in. sq. edging strips but taking care not to stick the plugs to the hull. Only when completely dry should they be removed and stuck to the 3/32in. sheet decks (20in. × 3in. and 7in. × 3in.). The plugs must fit centrally on these decks.

When dry the decks can be pressed into the hull openings; the main deck should fit between B3 and B4 but careful trimming elsewhere is required to produce a snug fit.

The superstructures are simply balsa boxes with ply decks and should cause no problems. Gun platforms, director positions bridge, etc., require edging in thin card and an impact adhesive such as Evo-Stik is ideal for these parts. The funnels are made from card wrapped around balsa formers. The top former should be about ¼in. below the top of the funnel and the bottom former angled to produce the desired aft rake.

The masts are quite simple and made from wire brass tube soldered or epoxied together. The fore-mast is perhaps best built up 'in situ' in order to produce a rake to match the funnel. The twin turret and single gun shields were made from balsa blocks carved to shape, althought the turret can also use a sheet balsa box with block for the back and roof. To produce a good finish turret and shields can be faced in thin card. The gun barrels can be tube, dowel or even wire with a suitable piece of plastic tube at the base.

Since the prototype was intended to be a 'Stand-Off Scale' model, and fellow club members opinions are varied as to how far you should stand-off from this model, the details were deliberately kept simple. The aim was to produce the right impression without going into super detailing. You can't see the small bits when sailing, they are prone to damage and if that were not enough it is easier to build!

Finishing of deck, superstructure and details is a matter of personal choice. To my mind cellulose dope is the best, being easy to apply, quick to dry and several coats can be applied to produce a good base for painting. It does help if you can tolerate if not actually like the smell of dope and thinners.

Painting

As in other navies, German destroyers were often painted in distinctive camouflage schemes. Details can be obtained from suitable reference books, if you are not cheeky enough to work your way through a book shop's stock then try your local reference library. The lines of the model are sufficiently attractive, to my mind, that a plain light grey colour scheme can produce a handsome result. *Humbrol* No. 40 grey paint was used for the hull sides, superstructure and details. The decks were painted matt slate grey whilst below the water-line gloss black was used.

Equipment Installation

The conventional equipment fit of receiver and batteries, main drive batteries and motor can be applied in this model. The rudder servo sat between the two propeller shafts aft of B5. If the servo has the correct action, i.e. right rudder produces a clockwise rotation, then simple wire links from both sides of the servo arm can be used. If it rotates in the opposite sense then some form of bellcrank can be used. Which ever method is employed take care to ensure that the rudders will centralise together and operate smoothy with a minimum of 'slop'.

The prototype used a Monoperm Super Special Motor powered by six 1.8 ah Ni-Cads. This is rather more power than needed and a standard Monoperm on 6 volts or equivalent should be adequate. Speed control was obtained by a Bob's Models Varyspeed board. I am not entirely satisfied with its slow speed performance, which lacks fine control, but there is no denying it is an economical and practical system. The twin screws used an elastic band and pulley drive. This may seem crude but it avoids the accuracy needed in a gear set up and is very quiet in operation. The largest pulleys possible, ¾in. dia. **Ripmax** plastic ones, were used on both propeller and motor shafts. There may be some advantage in gearing the drive down, by using a smaller motor pulley, if coarser pitch or larger propellers are employed. One precaution is to check the conditions of the band before each sailing session, if it appears perished, frayed or damaged in any way then replace it. A little searching amongst the stationary suppliers produced some quite tough bands which are about 1/16in. sq. in section. Use a band size which produces a tight, but not excessively so, fit over the pulleys.

Sailing

The prototype required some extra ballast in the bow and stern in order to sit on the desired waterline. With such light superstructure the model has more than adequate stability and assuming you don't sail in scale typhoons it is a dry ship. Top speed with the Monoperm is about 4ft./sec., direct drive to a P30 propeller would probably give 5-6 ft./sec. which is too fast for realism. The twin rudders proved to be a great success, steering at all speeds was positive. With a rudder angle of 30° a 7ft. turning circle was achieved and on centralising the rudders the model would immediately run straight. Once moving astern the twin rudders proved to be almost as effective as when going forward. Since the total rudder area is not excessive I can only assume that the twin rudders produce a powerful slot effect upon each other to give this degree of manoeuvrability.

I can hardly wait to try it out in a steering event. Till then my *Zerstorer* will slink its sinister way around the local water in the company of a fellow club member's *Bismarck*, looking out for some unsuspecting convoy of merchantmen.

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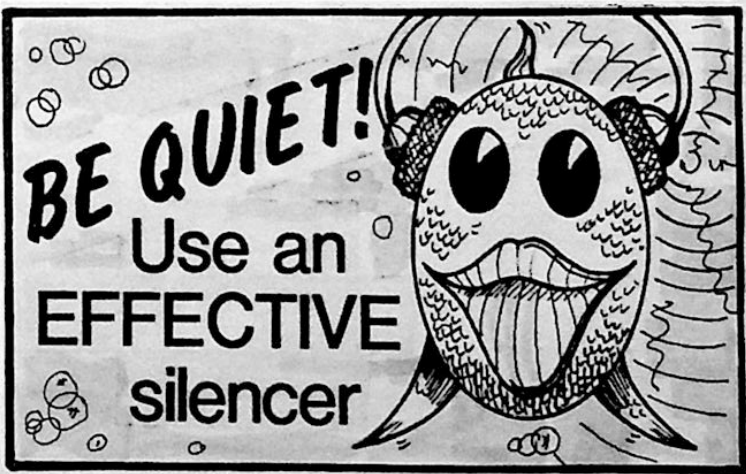


S.L. Branksome - 1896

The construction of an award winning model of the famous Windermere launch

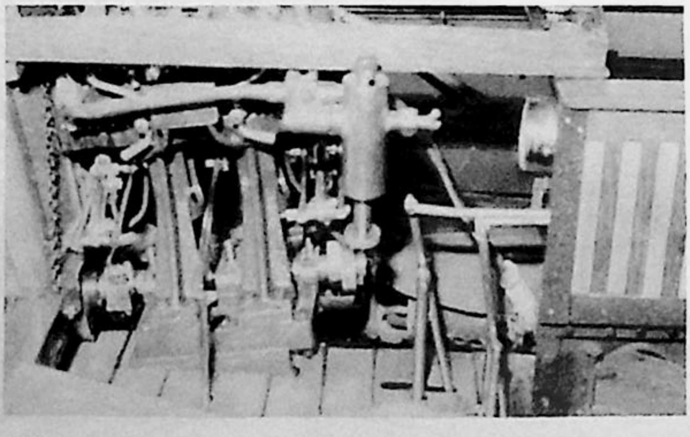
Part Four

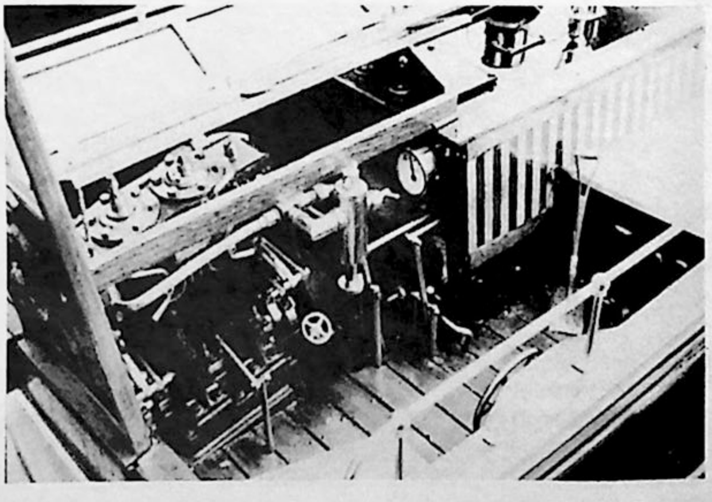
Described by Keith Townsend

UPON returning home from Yorkshire a preliminary testing of the boiler and burner was carried out and for those of you who have had little to do with steam it is not as straightforward as it seems, inasmuch as there are settling down problems with a new boiler and burner and a technique to be learnt for pre-heating and lighting the burner. A typical settling down problem was the small leaks under pressure from the various seatings. These were soon cured by tightening down once the boiler has cooled off. I found after making these necessary adjustments my boiler would hold in excess of 60psi with not a whisp of steam escaping, this is only credit to the superb job Mr. Cairns made of the boiler. Much time was wasted with my wife and cat playing with the radio controlled steam valves, especially with the one connected to the whistle. Enough of this playing and on to the serious matter of building the engine.

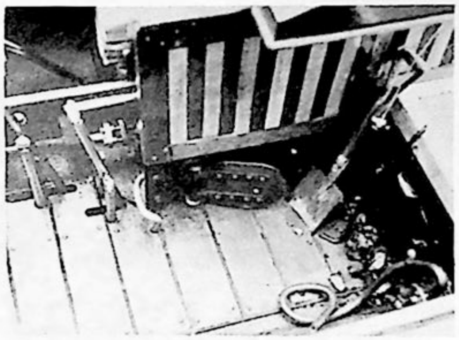
Having never built an engine from castings before it looked rather like a jigsaw puzzle with no straight edges as a guide to begin with, however, upon studying the rather scant instructions and working drawings it began to make sense. It was obvious that the castings would require cleaning up with files and power tools. Construction of the engine turned out to be very straightforward. Some drilling and tapping was required for the bearing oilers and cylinder drain cocks and some machining was required on the centre bearing housing. Suffice to say, after a lot of trial and error it all went together very well. Praise indeed to a good old English firm of engineers. The steam manifolds and exhaust manifold were simplicity itself to fit into the valve and cylinder chests, it was just a little tricky setting up the eccentrics on the crank-shaft to obtain the correct valve openings. The engine was built in the initial stage without the Stephenson Launch reversing gear as I felt I could add this after the engine had been bench tested, so off to the garage with boiler, burner and shining new engine. These were bolted down on the bench and I fired up with 60psi. Nothing happened when I opened up the steam valves apart from rising pressure in the boiler and the reassuring sight of the safety valve blowing. Once again, to anyone who is not familiar with steam engines and in particular the Double Ten, they tend to be extremely stiff. Whilst I could just turn it over by hand, it would have needed pressure in excess of 100psi to shift it. I closed down the boiler and burner and disconnected the engine. I then connected the engine to a lathe type layout, at the business end using a high powered electric drill and a gear box chuck reducer which brought the revs down to 300rpm. I then removed the flywheel from the engine and connected up the crank-shaft to the chuck of the gear box, making certain of a perfect alignment. I then switched on the power and started the waiting game, gradually varying and increasing the speed up to the manufacturer's specified safe limit of 2,000rpm, periodically oiling all the moving parts and squirting oil into the intake manifolds. This I understand is an acceptable way of loosening up and bedding down a new engine and approximately 24 hours of periodical running was necessary. The engine was

Two views of the engine room. Note the 3-rod mechanism: one for reversing, one for throttle and one for whistle. The burner mouth can just be seen behind the rods. Photo at right by R. Brigden.





then removed from the drill and reconnected to the boiler once again; with everything oiled and displacement lubrication charged with oil I fired up, obtaining 25psi. I opened the valves very slightly and to my sheer joy the engine sprang into life. Several hours were spent bench running the engine until such time one filling of the boiler would give me 20 minutes running at full throttle. Pleased with the achievement so far, it was time to disconnect the engine again and fit the Stephenson Launch reversing gear. The castings were partly finished and ony needed cleaning up and drilling, the latter requiring great care, also drilling of the eccentrics which fit on the crankshaft ends required extreme care. As it was intended to move the reversing gear by servo and not to cheat by putting in an auxiliary gear box, it was essential that the reversing gear moved freely and it was my experience that it is essential that the drag links are a perfect sliding fit. To achieve this end I used Brasso and elbow grease. The only other item that should be mentioned is to take great care in setting up the valves when fitting the reversing gear. Also at this stage the engine had to stop resembling the Stuart Turner Double Ten. This I did by making two brass and steel dummy valve rod ends which were tapped into the cylinder heads. The cylinders and valve gear were clad with tiny walnut planks. This I did by first wrapping $\frac{1}{32}$in. marine ply round the steam chests and securing it with fine copper wire. I then planked over this with the tiny walnut planks using heat resistant epoxy glue. I simulated the brass rivets with brass pins. At the side of the two cylinders the *Branksome*'s engine also has an oil box and this I fashioned out of brass with a flip up lid and two drip feed pipes, so that it would not only be an ornament but functional as well and supply the eccentrics with the occasional drip of oil. The engine was again bench run but this time with the boiler lagged with a triple layer of foil covered asbestos, and with this jacket on the boiler definitely improved in performance. Pressure was obtained much quicker and the reversing gear performed perfectly. The engine was then run for several hours intermittently. A non-return valve is attached to the end of the boiler which is connected to a hand force feed pump for replenishing the boiler whilst in steam. This is bolted inside an oblong water tank with a removable top and attached to the side of the steel cladding which surrounds the boiler. The tank is completely obscured from view beneath the coal bunker. This was not by accident but goes back months to careful planning of the boiler layout. The *Branksome*'s boiler is clad with timber panels and these I decided to build over a steel frame which is bolted together using 10BA nuts and bolts, and the sides of this are bolted to the edge of the boiler bed plate framing. To the top of this structure is bolted a $\frac{1}{8}$in. thick aluminium plate in which I had previously cut the holes for large and small inspection plates to be fitted at a later date. Also, I had cut the hole for the funnel to be positioned, drilling out and tapping this to accept the seventeen securing bolts for the funnel flange. I was extremely concerned at the heat radiation from the burner and boiler as I had visions of the timbers catching fire. I did carry out experiments with pieces of timber close to the boiler and burner and I found the extremes of heat caused the timber to distort in a matter of ten minutes, and near the burner they would begin to smoulder. These problems I overcame very quickly in the following way.



Close-up of the coal hole with shovel and ash rake to hand. Photo: R. Brigden.

The engine and boiler were bolted and strapped to a steel base plate with a fire girder running round the outer edge. To the bottom of this was added a further sheet of lightweight metal. I insulated the underside of the base that the boiler and engine are attached to with a material called 'Kao Wool'. This is a ceramic fibre, $\frac{1}{4}$in. thick (obtainable from Blackgate Engineering in varying thicknesses). On completion of this stage I fired up yet again and was pleased to find that I could keep my hand on the underside of the base plate. The base plate is hollow and was now working like a thermos. A similar method was used to form the sides and end of the boiler housing so that at a later date when this was in the boat the timber panels would be bolted into position. The servos to work the reversing gear, throttle and whistle were placed in appropriate positions in the boat. As an extra safeguard against fire damage, between the frames up to the thickness of $\frac{1}{2}$in. running from the keel to the bulwark, in the boiler and engine areas, three layers of 'Kao Wool' were inserted, and a lightweight sheet of steel was cut to shape and inserted and screwed into the frames.

The boiler engine assembly was then placed in position and screwed and bolted through the steel sheet into the frames and keel. The servos were then connected up to various rods and found to function very satisfactorily using a high torque high speed servo for the reversing gear. The prop-shaft was then connected. A temporary tank 9ft. long by 2ft. wide and 2ft. in depth was constructed out of polythene sheeting and filled with water and my *Branksome* placed in it for a first test. A considerable amount of weights were placed in her to take her down to the waterline. She was then fired up and I waited with baited breath and transmitter in both hands for the pressure gauge to reach 40psi (well below normal working pressures). As she reached the magical 40psi I eased open the throttle control and with just a whisp of steam coming from a make-shift funnel she started to glide forward with the whistle and reversing gear working to perfection. This was a most rewarding sight to see.

Next month — The funnel, planking of the boiler and start of the superstructure.

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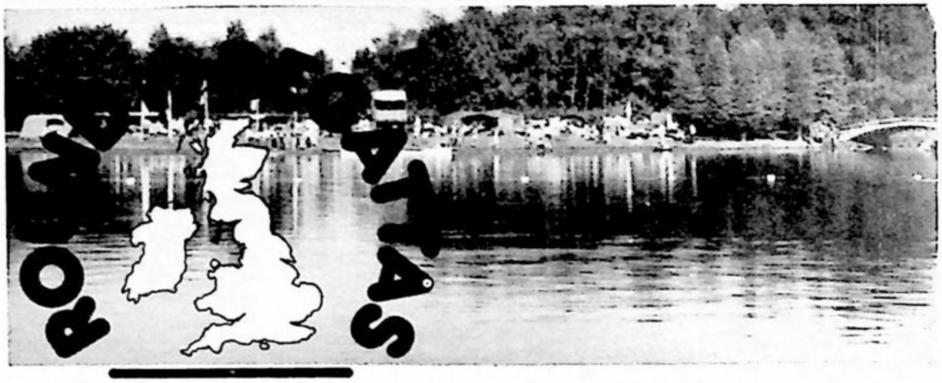
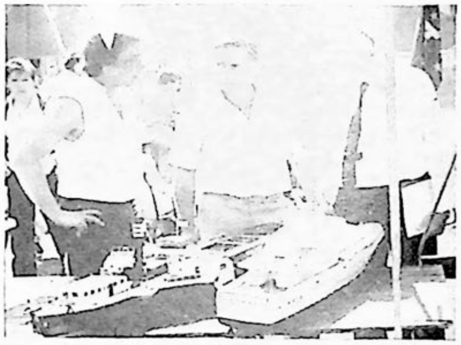




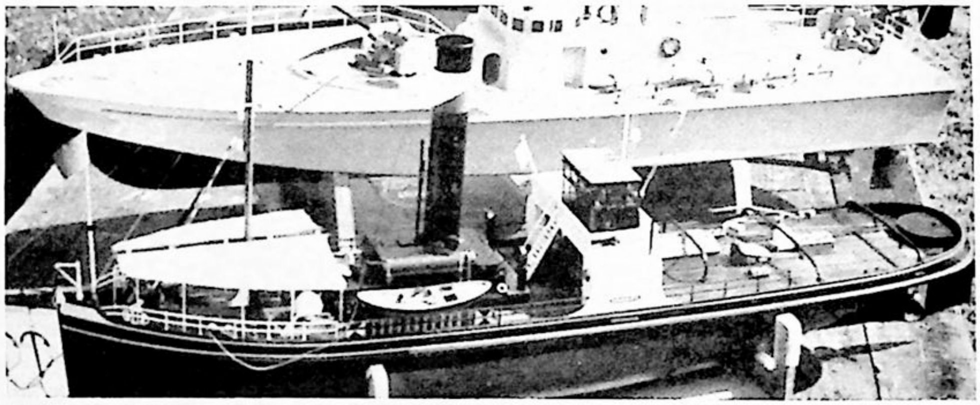
Left, the excellent lake at Zuiderpark, Rotterdam. Top, Chief Judge Willi Thuysbaert (with glasses) and judge Toon Krowinkel (centre) discuss a point with a competitor. Below, winning model Agnard in F2A Snr; behind is F2A-B Snr winner.

THE first International competition for the increasingly popular 575 yacht was recently held in the magnificent Zuiderpark on the southern outskirts of Rotterdam, Holland. The 575 event was part of a three day regatta, 29th to 31st May, which also included all Naviga radio scale classes, F2 A, B and C plus F2X (for models under 70cm in length) and F6, 7 (demonstration events).

The Zuiderpark water is the home of m.b.v. Neptunus, the organising club, and is a perfect setting for model boating — especially when blessed by the hot sunny weather which refused to go away, despite the attendance of three English competitors! In addition to the Anglo-Saxons there were 16 West Germans and 77 Dutchmen. Sixteen took part in the 575s — the remainder in the scale events.

As can be seen the lake although large is surrounded by trees, and with little or no wind, the 575s struggled for every puff. Nevertheless, excellent racing was enjoyed and we can report that the ultra-friendly atmosphere surrounding 575 events in the UK has travelled across the North Sea intact, and much good humoured international barracking was enjoyed by all.

The English visitors certainly upheld national honours, and on a strange lake, congratulations are in order to Harvey



RESULTS

Name	Country	Club	Model	Static	Course 1	Course 2	Total	Place
			F-2-X Sr.					
S. Rohlig	D	smbc. Moers	Simson	94.66	57	87	181.66	1
B. G. Peach	GB	Mid Thames	Alfred	72.33	88	78	160.33	2
Mej. B. Schnebbe	D	smc. Düsseldorf	Greif	62.66	75	85	147.66	3
			F-2-X-B Sr.					
A. M. Weyman	NL	H.M.B.C.	Potto	74.33	89	100	174.33	1
P. Prigge	D	smbc. Moers	Neptun	70.33	82	89	159.33	2
			F-2-X-B Jr.					
K. Weyman	NL	H.M.B.C.	TID 169	75.66	87	95	170.66	1
D. Merkelbach	NL	Hercules	Shelly Foss	71	94	84	165	2
C. Th. Buys	NL	H.M.B.C.	Saltash	73.66	82	89	162.66	3
			F-2-A Sr.					
G. Schnebbe	D	smc. Düsseldorf	Agnard	92	95	87	187	1
G. J. de Koning	NL	Replica	Happy Hunter	85	—	95	180	2
B. W. Blom	NL	Neptunus	Italie	84	—	95	179	3
			F-2-A-B Sr.					
J. Lameitz	D	smc.Dusseldorf	PT-15	78	100	61	178	1
H. H. Hoogendoorn	NL	Arkelstad	Humaria	67	—	100	167	2
M. Derek	NL	Hercules	Mercantic	72	95	87	167	3
			F-2-A Jr.					
R. Stoeltie	NL	Replica	Wotan	80	90	89	170	1
I. Zwets	NL	Replica	Havendienst	72	—	93	165	2
A. Slagmolen	NL	Replica	Capri	70	—	21	91	3
			F-2-B Sr.					
W. W. H. Ruytenberg	NL	Neptunus	Smit Belgie	85.66	82	96	181.66	1
R. A. Kunst	NL	Neptunus	Siberia	82.33	79	86	168.33	2
J. B. B. Fick	NL	H.M.B.C.	Hajo	74	93	94	168	3
			F-2-B-B Sr.					
C. Akerboom	NL	Hercules	Düsseldorf	82	94	94	176	1
A. B. Trapman	NL	Hercules	Spica	85	84	82	169	2
A. J. van Viegen	NL	M.M.N.	Jaguar	74.66	84	89	163.66	3
			F-2-C Sr.					
S. van T'Verlaat	NL	Replica	Richelieu	92	94	100	192	1
L. W. Buth	NL	Ziud Z.W.	Smit Enterpise	85	83	88	173	2
J. Mos	NL	K.M.B.C.	Smit Enterprise	70	47	77	147	3
			F-6					
Team K.M.B.C.	NL	Oil Rig Fire Display						
			F-7					
E. Ruhwedel	D	smc. Hagen	St. Helena	85 ptn.				

Middleton for gaining the first place and with perhaps a humble mention in passing to yours truly in 'scraping' a fourth. Immense interest in the 575 class was shown by the scale modellers and the general public and the Rotteram local newspaper carried a report with colour photos in its weekend edition.

The scale boats were on display during the 575 racing, which incidentally took place on the Saturday, enabling the judges, led by our good friend Willi Thuysbaert, Naviga and Model Engineer Exhibition judge, to have a first look before the scale classes took over on Sunday and Monday.

After two days of sailing and a day's static judging in perfect water conditions, the results were published and the presentations made. We were very pleased to note that the only English competitor in scale, actually F2X, Brian Peach of the Mid Thames Model Boat Club came second with his tug *Alfred*. It was his first visit to a continental regatta and he returned home with the definite aim to return in future and bring some colleagues with him.

575

Name	C'y	Club	Place
H. Middleton	GB	Leicester MBC	1
G. G. J. Matser	NL	Neptunus	2
A. F. J. Kriesels	NL	Neptunus	3
J. Cundell	GB	Cygnets	4
E. A. Bakker	NL	H.M.B.C.	5
A. van Belle	NL	Neptunus	6
E. Toussaint	NL	H.M.B.C.	7
A. M. Weyman	NL	H.M.B.C.	8
S. van T'Verlaat	NL	Replica	9/10
K. Weyman	NL	H.M.B.C.	9/10
T. Toussaint	NL	H.M.B.C.	11
D. J. Cupedo	NL	Neptunus	12
B. G. Peach	GB	Mid Thames MBC	13/14
M. A. van Houwelingen	NL	Neptunus	15
C. W. Wijnen	NL	Neptunus	16

It must be put on record that the Dutch organisation was incredibly good — nothing was forgotten and the whole event ran in an efficient but extremely friendly atmosphere.

Social events were arranged on Saturday and Sunday evenings — a barbecue and a festive evening — both very enjoyable.

Camping facilities are available in the Park and hotel accommodation is close to hand. The pace of the event is leisurely and allows some time to slip off to see the sights of Rotterdam — and no model boater should miss out visiting the docks.

All in all, a very enjoyable meeting which brings together two compatible forms of model boating. Make a note in your diaries for 1983 *now*, for the similar event on 21st, 22nd and 23rd May.

John Cundell

R. Wishart with his 6 metre at the Scottish MYA 6M Championships in Edinburgh. Photo by A. Mackenzie.

Scottish Model Yacht Association — 6 Metre Championship — Saturday, 8th May — Hosted by Inverleith Model Yacht Club, Edinburgh.

The Championship was held on a beautiful and warm, sunny day, with a medium to fresh S.W. wind blowing directly down the pond.

Before reporting on the event in detail it may be of interest to readers to give a list of the competing yachts together with year of construction and owner's name. These were as follows:

Yacht	Built	Owner
Wasp	1937	G. Wishart
Neda	1937	A. Fraser
Renovated	1948	A. Turnbull
Fiona	1951	W. Arthur
Fulmar	1955	H. Shields
Fram	1957	R. Wishart
San Gor	1976	J. Stewart
Lindsey Anne	1980	J. Milne
Girl Anne	1981	I. Clements

We must assume the 1960s was not a good vintage decade for 6M construction. All the yachts were of planked construction, eight of them being varnished, which made a pleasant change from the ubiquitous fibreglass hull. Of particular interest were the yachts of Robert Wishart and John Milne, the former being yellow pine with mahogany inset waterline and king plank, the latter being a beautiful oroco wood and mahogany built on ash timbers. Hugh Shield's new Bantock design having been completed too late to be measured in, he had to bring in his reserve line of defence.

In order to make the sailing a little harder, the finishing markers were set across the north west corner of the pond for a beat, while for a run the markers were across the full width of the eastern end of the pond. The yachts of Messrs. Shields, Turnbull and Wishart gradually scored ahead of the rest of the fleet, all of them being particularly good on the beat. The final race was between Messrs. Shields and Wishart, both with identical scores, and after a terrific tussle, Hugh Shields managed to take the beat with Robert Wishart winning the run. This outcome was very well earned as these two competitors are the most consistent long-term champions sailing north of the border, the final result being a win for Hugh Shields scoring 34 points, Robert Wishart coming second with 33 points, third place being taken by Allan Turnbull.

There were very few resails thanks to the excellent Commodoreship of Vincent Markham.

A. C. Mackenzie, P.R.O.,
Inverleith M.Y.C.

* * *

Wessex Model Boat Club — Mid-Season Regatta

Although gratifying to report successes, as we all know, some failures are inevitable and having reached the halfway stage in our competition calendar the failures are few and a successful regatta more the order of the day. We have had three regattas to date; ½hr. Multi, Deep Vee and Hydroplanes and the first of our two Scale days.

The ½hr. Multi held on the 2nd May was very successful with contingents from Penarth, Cotswolds and Kingfishers arriving in force. The weather, however caused a headache. Although the usual 24hr. downpour didn't happen, the wind more than made up for it by blowing a hooley all day long which caused several boats to capsize or fill up with water. As you can imagine, the rescue boat was in great demand and it is rumoured that the Penarth crowd will bring two of their own next year for their own exclusive use!

RESULTS:

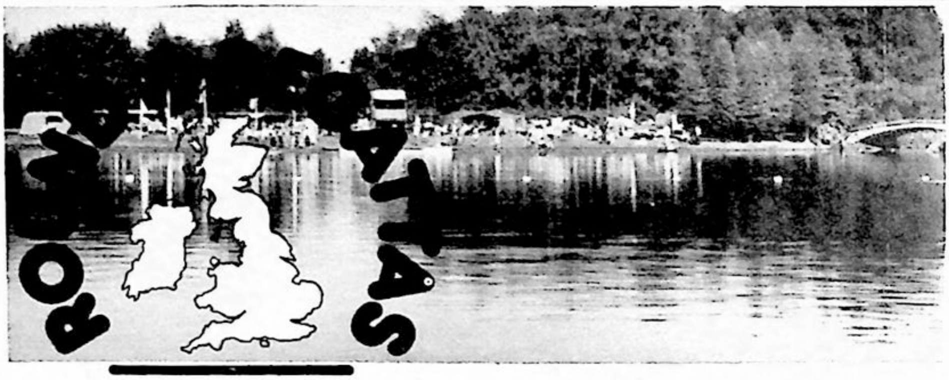
Class A — 57 laps.	**Class B** — 44 laps.	**Class C** — 39 laps.
1. J. Llewelyn	1. P. Holder	1. D. Williams
2. J. Uzzell	2. C. Carpenter	2. M. Denham
3. J. Dodswell	3. H. Read	3. C. Crouch

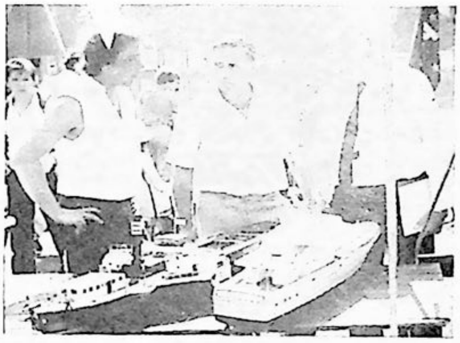
The lap scores are correct, the reduction was entirely due to the strong wind which increased in ferocity as the day went on.

Moving on to the Deep Vee and Hydro event, due to the lack of support from outside the club, the Deep Vee had to be postponed. Several hydroplanes were entered and we were all treated to some exciting displays during the practice session with John Bright's 'Is it a boat/is it a plane?' hydro making a mockery of our course. Unfortunately the casualty rate meant that there were insufficient boats left to have a race. Thanks are extended to all the hydro boys who did turn up; Paul Firmin has now found the right prop for his and it goes very well.

Finally on to the Scale day. Held at Queens Park on a warm, sunny afternoon the day went very well. Although only one visitor turned up, our own members did us proud. Those who did arrive were able to have a good look at Tom Andrews' 1982 Silver Medal M.E. Exhibition winning model of the Armoured Troop Carrier Refueller and an even closer look at his extremely attractive mechanic.

Running in tandem with the Scale event was the first heat in our *Shadow* competition. Being classed as semi-scale, four boats were entered in the Scale

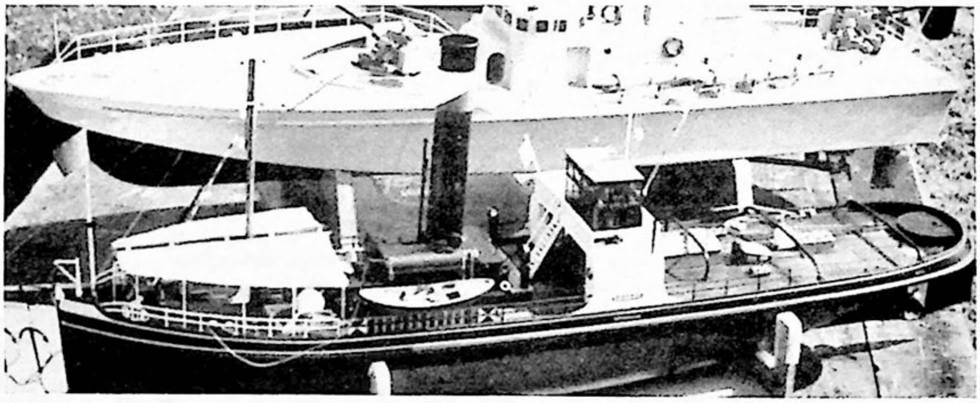




THE first International competition for the increasingly popular 575 yacht was recently held in the magnificent Zuiderpark on the southern outskirts of Rotterdam, Holland. The 575 event was part of a three day regatta, 29th to 31st May, which also included all Naviga radio scale classes, F2 A, B and C plus F2X (for models under 70cm in length) and F6, 7 (demonstration events).

The Zuiderpark water is the home of m.b.v. Neptunus, the organising club, and is a perfect setting for model boating — especially when blessed by the hot sunny weather which refused to go away, despite the attendance of three English competitors! In addition to the Anglo-Saxons there were 16 West Germans and 77 Dutchmen. Sixteen took part in the 575s — the remainder in the scale events.

As can be seen the lake although large is surrounded by trees, and with little or no wind, the 575s struggled for every puff. Nevertheless, excellent racing was enjoyed and we can report that the ultra-friendly atmosphere surrounding 575 events in the UK has travelled across the North Sea intact, and much good humoured international barracking was enjoyed by all.



Left, the excellent lake at Zuiderpark, Rotterdam. Top, Chief Judge Willi Thuysbaert (with glasses) and judge Toon Krowinkel (centre) discuss a point with a competitor. Below, winning model Agnard in F2A Snr; behind is F2A-B Snr winner.

The English visitors certainly upheld national honours, and on a strange lake, congratulations are in order to Harvey

RESULTS

Name	Country	Club	Model	Static	Course 1	Course 2	Total	Place
			F-2-X Sr.					
S. Rohlig	D	smbc. Moers	Simson	94.66	57	87	181.66	1
B. G. Peach	GB	Mid Thames	Alfred	72.33	88	78	160.33	2
Mej. B. Schnebbe	D	smc. Düsseldorf	Greif	62.66	75	85	147.66	3
			F-2-X-B Sr.					
A. M. Weyman	NL	H.M.B.C.	Potto	74.33	89	100	174.33	1
P. Prigge	D	smbc. Moers	Neptun	70.33	82	89	159.33	2
			F-2-X-B Jr.					
K. Weyman	NL	H.M.B.C.	TID 169	75.66	87	95	170.66	1
D. Merkelbach	NL	Hercules	Shelly Foss	71	94	84	165	2
C. Th. Buys	NL	H.M.B.C.	Saltash	73.66	82	89	162.66	3
			F-2-A Sr.					
G. Schnebbe	D	smc. Düsseldorf	Agnard	92	95	87	187	1
G. J. de Koning	NL	Replica	Happy Hunter	85	—	95	180	2
B. W. Blom	NL	Neptunus	Italie	84	—	95	179	3
			F-2-A-B Sr.					
J. Lameitz	D	smc.Düsseldorf	PT-15	78	100	61	178	1
H. H. Hoogendoorn	NL	Arkelstad	Humaria	67	—	100	167	2
M. Derek	NL	Hercules	Mercantic	72	95	87	167	3
			F-2-A Jr.					
R. Stoeltie	NL	Replica	Wotan	80	90	89	170	1
I. Zwets	NL	Replica	Havendienst	72	—	93	165	2
A. Slagmolen	NL	Replica	Capri	70	—	21	91	3
			F-2-B Sr.					
W. W. H. Ruytenberg	NL	Neptunus	Smit Belgie	85.66	82	96	181.66	1
R. A. Kunst	NL	Neptunus	Siberia	82.33	79	86	168.33	2
J. B. B. Fick	NL	H.M.B.C.	Hajo	74	93	94	168	3
			F-2-B-B Sr.					
C. Akerboom	NL	Hercules	Düsseldorf	82	94	94	176	1
A. B. Trapman	NL	Hercules	Spica	85	84	82	169	2
A. J. van Viegen	NL	M.M.N.	Jaguar	74.66	84	89	163.66	3
			F-2-C Sr.					
S. van T'Verlaat	NL	Replica	Richelieu	92	94	100	192	1
L. W. Buth	NL	Ziud Z.W.	Smit Enterpise	85	83	88	173	2
J. Mos	NL	K.M.B.C.	Smit Enterprise	70	47	77	147	3
			F-6					
Team K.M.B.C.	NL	Oil Rig Fire Display						
			F-7					
E. Ruhwedel	D	smc. Hagen	St. Helena	85 ptn.				

Middleton for gaining the first place and with perhaps a humble mention in passing to yours truly in 'scraping' a fourth. Immense interest in the 575 class was shown by the scale modellers and the general public and the Rotteram local newspaper carried a report with colour photos in its weekend edition.

The scale boats were on display during the 575 racing, which incidentally took place on the Saturday, enabling the judges, led by our good friend Willi Thuysbaert, Naviga and Model Engineer Exhibition judge, to have a first look before the scale classes took over on Sunday and Monday.

After two days of sailing and a day's static judging in perfect water conditions, the results were published and the presentations made. We were very pleased to note that the only English competitor in scale, actually F2X, Brian Peach of the Mid Thames Model Boat Club came second with his tug *Alfred*. It was his first visit to a continental regatta and he returned home with the definite aim to return in future and bring some colleagues with him.

575

Name	C'y	Club	Place
H. Middleton	GB	Leicester MBC	1
G. G. J. Matser	NL	Neptunus	2
A. F. J. Kriesels	NL	Neptunus	3
J. Cundell	GB	Cygnets	4
E. A. Bakker	NL	H.M.B.C.	5
A. van Belle	NL	Neptunus	6
E. Toussaint	NL	H.M.B.C.	7
A. M. Weyman	NL	H.M.B.C.	8
S. van T'Verlaat	NL	Replica	9/10
K. Weyman	NL	H.M.B.C.	9/10
T. Toussaint	NL	H.M.B.C.	11
D. J. Cupedo	NL	Neptunus	12
B. G. Peach	GB	Mid Thames MBC	13/14
M. A. van Houwelingen	NL	Neptunus	15
C. W. Wijnen	NL	Neptunus	16

It must be put on record that the Dutch organisation was incredibly good — nothing was forgotten and the whole event ran in an efficient but extremely friendly atmosphere.

Social events were arranged on Saturday and Sunday evenings — a barbecue and a festive evening — both very enjoyable.

Camping facilities are available in the Park and hotel accommodation is close to hand. The pace of the event is leisurely and allows some time to slip off to see the sights of Rotterdam — and no model boater should miss out visiting the docks.

All in all, a very enjoyable meeting which brings together two compatible forms of model boating. Make a note in your diaries for 1983 *now*, for the similar event on 21st, 22nd and 23rd May.

John Cundell

R. Wishart with his 6 metre at the Scottish MYA 6M Championships in Edinburgh. Photo by A. Mackenzie.

Scottish Model Yacht Association — 6 Metre Championship — Saturday, 8th May — Hosted by Inverleith Model Yacht Club, Edinburgh.

The Championship was held on a beautiful and warm, sunny day, with a medium to fresh S.W. wind blowing directly down the pond.

Before reporting on the event in detail it may be of interest to readers to give a list of the competing yachts together with year of construction and owner's name. These were as follows:

Yacht	Built	Owner
Wasp	1937	G. Wishart
Neda	1937	A. Fraser
Renovated	1948	A. Turnbull
Fiona	1951	W. Arthur
Fulmar	1955	H. Shields
Fram	1957	R. Wishart
San Gor	1976	J. Stewart
Lindsey Anne	1980	J. Milne
Girl Anne	1981	I. Clements

We must assume the 1960s was not a good vintage decade for 6M construction. All the yachts were of planked construction, eight of them being varnished, which made a pleasant change from the ubiquitous fibreglass hull. Of particular interest were the yachts of Robert Wishart and John Milne, the former being yellow pine with mahogany inset waterline and king plank, the latter being a beautiful oroco wood and mahogany built on ash timbers. Hugh Shield's new Bantock design having been completed too late to be measured in, he had to bring in his reserve line of defence.

In order to make the sailing a little harder, the finishing markers were set across the north west corner of the pond for a beat, while for a run the markers were across the full width of the eastern end of the pond. The yachts of Messrs. Shields, Turnbull and Wishart gradually scored ahead of the rest of the fleet, all of them being particularly good on the beat. The final race was between Messrs. Shields and Wishart, both with identical scores, and after a terrific tussle, Hugh Shields managed to take the beat with Robert Wishart winning the run. This outcome was very well earned as these two competitors are the most consistent long-term champions sailing north of the border, the final result being a win for Hugh Shields scoring 34 points, Robert Wishart coming second with 33 points, third place being taken by Allan Turnbull.

There were very few resails thanks to the excellent Commodoreship of Vincent Markham.

A. C. Mackenzie, P.R.O.,
Inverleith M.Y.C.

* * *

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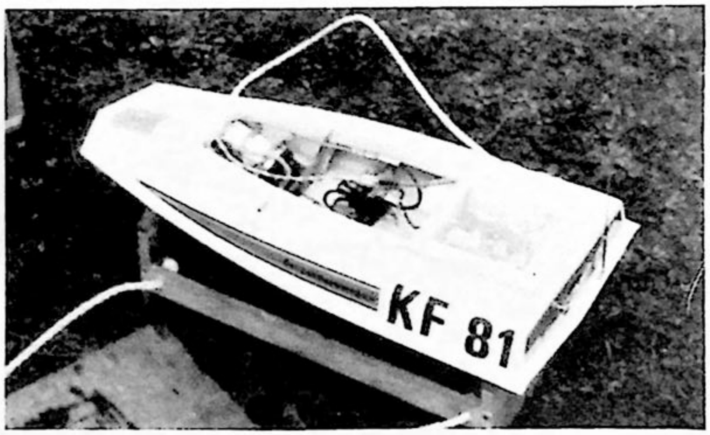
Above, competitors at Cwmbran All Electric for the Restricted race. Winner, G. Jones is top right. Right, Nick Rees repairing one of his o/d boats. Below, winning 2kg boat, a Krick Lady by P. Holmes. Photos by G. Jones.



competition also, and proceeded to walk off with the first and second in the 'kit' class. It must be said however that the breeze scuppered several electric boats during the reversing and docking stages. Those of you who remember Jack Fry and his amazing Reliant Van (May issue of *Model Boats*) may be pleased to know that he has produced yet another model, a Graupner *Whalecatcher*, from within. There is no truth in the rumour that the carrying case for this fine model was made from his kitchen table. It was, in fact, made up from his sink unit as the sink itself won't now fit in his van!

Results:

Scratch Built

1. J. Fry	Director Class Tug *Grinder*	92%
2. J. Fry	*Calypso*	88.5%
3. T. Andrews	Landing Craft	79.5%

Kit Class

1. M. Denham	SHG *Shadow*	92.25% + Wessex Scale Trophy
2. P. Dunbar	SHG *Shadow*	86.16% (Junior)
3. J. Fry	*Whalecatcher*	86%

M. Denham,
Assistant PRO.

* * *

Cwmbran Modelling Society — All Electric — 28th March 1982.

Ten competitors from as far afield as Sheffield and Ramsgate, together with another six from the host club, made our first venture into fast electric competition a very enjoyable day.

Although held very early in the season, due to the use of the lake by rowing boats from April to September, the weather could not have been better.

The most popular class was Restricted, for which we supplied standard motors to ensure fairness. The course used was a standard Naviga M, 60 metres by 30 metres.

It is hoped to hold another all electric at Cwmbran in 1983.

Results:

Class	Restricted	2.5Kg	2Kg	+2Kg
Name	G. Jones	J. Denney	P. Holmes	D. Wooley
Laps	8.1	8.1	22.0	23.1
Boat	*Sesqui*	*Ellipse* Mk. 5	*Krick Lady*	*Nagari*
Motor	550	Bullet 30	550	Keller 50/14
Gears	N/A	1.4:1	3:1	N/A
Battery	8×1.2 ahr	24×1.2 ahr	10×2 ahr	22×4 ahr.
Prop	X30	X45	20/25	18/18

G. Jones

* * *

Milton Keynes Model Society — 575 Regatta

It was on Sunday the 4th July at 11.00 a.m. that the mighty gathered by the water's edge of Willen Lake, Milton Keynes, in readiness to do battle once again for the M.K.D.C. Challenge Cup for 575 yachts. Several hours earlier, however, a worried race organiser was viewing the skies around this well-known city praying for the wind to ease and the sun to shine! How he was cursing that remark made two years ago by a competitor — 'There's never any wind at Willen Lake . . . '. Since then there has been a more than adequate supply!

For the 21 competitors (of which four were ladies) the only drama of the day occurred in the first heat when one of the vessels sank, to be quickly retrieved by an alert rescue team in their fibreglass boat.

Racing continued throughout the day culminating at 4.30 p.m. with a clear winner, but before the presentations were made a light-hearted race comprising of three teams rounded off the day's events. The winning team was lead by someone called John Cundell!

The presentations were made by Barry Capp of the Milton Keynes Model Society who organised this year's event.

The winner of the M.K.D.C. Challenge Cup, winners' trophy and bottle of sherry was Brian Poulter of Kingsbury Water Park Club, Birmingham — 7pts.; second place trophy to Mike Kemp of Milton Keynes Model Society — 8pts; third place trophy to Barry Allcock of Nantwich Model Boat Club — 13¾pts; Sheila Allcock was awarded the trophy for best lady entrant with 14¾pts.

The Society congratulates the winners and invites you all to do battle again next year by which time, hopefully, the wind will have eased . . . !

B. Mason

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BARRACKING!

Is it here to stay? – asks Kingfisher Model Boat Club member, Keith Bragg

TO a few of us the near theatrical art of 'Barracking' at scale regattas (and don't think 575 regattas are any different) is becoming a vital part of competition. Without a raucous call such as 'You nearly missed that buoy', those of us who compete seriously would not feel at home on the water. In fact 'Barracking' is becoming so popular a leading model manufacturer is considering organising a 'Barrackers' holiday, where models would be banned but where teams would compete on semi-military lines, and even MAP issued its 'Barracker of the Week' award at the recent Filey holiday. 'Barracking' sharpens the senses; eyesight becomes super keen, ears tend to fold forward to cover their orifices, fingers on transmitters seem to change into a lower gear for deadly accurate control and yet, when it is all over they seem to have a habit of raising themselves vertically and quickly in pairs towards the 'Barrackers'.

Many years of evolution have resulted in some pretty definite rules for 'Barracking'. They almost parallel the evolution of the MPBA rulebook by the same duly elected officers, but before proceeding to explain them I would like to state here and now that as a giver and receiver of 'Barracking', I fully approve of it. It is difficult to describe the immense feeling of relaxation that results from someone whispering into your ear 'Your flies are undone', just as every muscle in your body is tensing to get that boat to reverse through a dog-leg set of buoys with a 15mph cross wind. We can all get too serious about our competition and a bit of 'Barracking' is a healthy way to bring us back to earth.

Rules: (They are definitely not complete, as each Club/Area will have evolved its own local additions).

1. All 'Barrackers' (whether they barrack from the lakeside or through the pages of *Model Boats*) must be paid up members of MPBA and compete regularly at MPBA regattas.
2. Groups of more than 55 'Barrackers' are considered 'unfair'.
3. Anything in the way of auditory or visual 'Barracking' is permitted. (Physical 'Barracking' is conducted purely at the administrator's own risk and the consequences are not covered by the MPBA Insurance Scheme).
4. Auditory 'Barracking' can cover any subject, but must not get personal about the recipient.
5. Offensive language must not be used.
6. Try not to invite ribald comments by retrieve radio controlled bones, is frowned upon.
7. Wash making is only permitted when it will assist the recipient.
8. Interference with the recipient's personal belongings, e.g. lunch boxes, beer, clothing, tool box, wallet or lady companion) is at the 'Barracker's' own risk.
9. All 'Barracking' must be conducted with the best of possible taste.
10. Indoor 'Barracking' is to be conducted at half the volume of outdoor 'Barracking'.
11. 'Barracking' must not be conducted in such a way as to influence the judging of the recipient's efforts unless it is conducted by an officially recognised group of 'Barrackers' (see rules 1 and 2).
12. Official MPBA statements such as 'May we see your MPBA Card', are considered unfair 'Barracking'.
13. 'Barracking' of Juniors may only be administered by other Juniors.

As can be seen, these rules are pretty far reaching. They are also pretty flexible, leaving plenty of room for the individual 'barrack', and if any MPBA member feels any vital rules have been left out, further evolution can be expected. To counter the 'barracking' rules I follow with a few suggestions, to recipients, that I have found useful in my defence against 'Barracking'.

Warnings and hints to recipients

1. Give as much as you get, but remember you will have to administer 30 sets of 'Barracks', so conserve your choice ones for your favourites.
2. Try to arrange a diversion for the 'Barrackers' (at one recent 'Barracking' an MPBA member arranged the commencement of the South Atlantic War to divert attention).
3. Keep your lunch box in your car, socks on your feet, lady at home, wallet on your person, keys hidden — beer (drink it), camera switched to *off* and take your bobble hat off before sailing.
4. Do not retaliate while competing (retaliate by beating them).
5. Never complain (it's only fun, so enjoy it).

Try not to invite ribald comments by quaint dress, fancy manoeuvres, making unguarded comments or holding hands (with anyone).

7. Never accept a sweet while sailing (it will probably be a laxative).
8. Keep fresh water, for spraying and washing down boats after competing in salt water (the boat's natural element), away from fellow 'Barrackers'.
9. Beware the non-existent run-off.
10. Beware the spider that has been encouraged to make a home inside your boat.
11. Always be prepared for the time when 'Barracking' does not occur (usually because of a passing shapely diversion or when you are out of favour for some reason), as you will need to concentrate extra hard.

Being a relatively inexperienced and new student of the art of 'Barracking', my study of the subject has been made keener by two intensive study-holidays, one at Brean Sands and another at Primrose Valley. At these venues not only were lessons given on straight 'Barracking' but close at hand the observation was possible of the Maestro's refinements of the fine arts of O.O.D. goading,organiser stripping, chip shop raiding, organisation shattering, bouncer baiting and the ultimate prctice of 'Barracker Barracking'.

Astonished as some boaters may be at this reporting of such an ungentlemanly sport — it's really good fun, so come and join us, and raise your hobby to a new relaxed level.

Keith (Kingfisher) Bragg
Second Lieutenant of S.B.S.
(Scale Barracking Squad).

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COUGAR CRAFT

KIT BAG

1

Reviewed by Glynn Guest

ONE of the most difficult questions any modeller could be asked is to recommend a suitable kit for a beginner. Even if a kit straightforward enough to build could be found, there is still the problem of ensuring that compatible accessories, such as motor and radio, are both available and purchased. The *Heica* model represents a serious attempt by a popular kit manufacturer to produce a model on which the novice can begin with confidence. As a bonus it may well appeal to those with little time to spare for our hobby. The actual construction time, not counting glue drying and painting, is about 6-8 hours. It would take considerable effort to spin the building of this model out for more than a week.

Lifting the lid

One could be forgiven for thinking that upon opening the box all you have to do is pour some glue in, shake the contents for two minutes and out will drop a completed model. There are two reasons for this delusion. Firstly, the hull is supplied in a ready-to-use condition, the deck is integral, and holes for propeller and rudder tubes are pre-drilled. Secondly, hiding beneath the 745mm long hull (or about 30in. for we older modellers), appears to be everything necessary to build this model.

Apart from the hull, which is moulded in Plura, there are abs mouldings for the cabin, flybridge, seat and two battery boxes. All the scale fittings, in plastic and metal, are included. Motive power is supplied by a **Robbe** Navy Kompact unit, a neat assembly of motor, gearbox, drive shaft, tube and matching propeller. Radio installation is taken care of with a plastic radio tray, motor switcher unit and rudder assembly.

the only obvious items needed to complete the model are the radio outfit and drive batteries. The absolute beginner will also need tools, glue and paint.

Instructions

The instructions comprise a multi-lingual booklet and an exploded diagram. The nature of this model does not merit a fullsize plan, which can often unnecessarily confuse the novice. I have only two criticisms of these instructions which must be something of a record. Only the German section of the booklet is illustrated and non-German builders have to keep flicking backwards and forwards between photographs and text. A better method could be to issue a separate sheet of illustrations in the same manner as the exploded diagram.

The second grumble would only concern the English-speaking builders of this model. The first thing you are instructed to do is cut two templates out of the booklet to build a stand for the model. Unfortunately if you do this you also destroy two pages of the English instructions. Who says the Germans have no sense of humour!

Sticky Stuff

One of the reputed advantages of Plura over common or garden abs is that epoxy adhesives can produce sound joints. The instructions advise that you roughen up all surfaces prior to gluing, and so provide a key. You should use something like 120 grade paper and make it visibly rough. A dab with 600 grade isn't enough. The Editor recommends the use of slow (24 hour) epoxy since the rapid type doesn't adhere too well. This probably reflects the mechanical nature of any epoxy-plastic joints in which rapid setting epoxy has insufficient time to penetrate the score marks fully. Editorial confidence was such that he defied me to break such a joint. I haven't been brave enough to attempt a delibrate fracture, but epoxy will stand up to the usual modelling knocks.

Since Plura looked like an abs type of plastic I also tried out the solvent type adhesive. Osma, used in the plumbing trade for joining plastic water pipes, is probably the best known, and can be obtained from builders' merchants.

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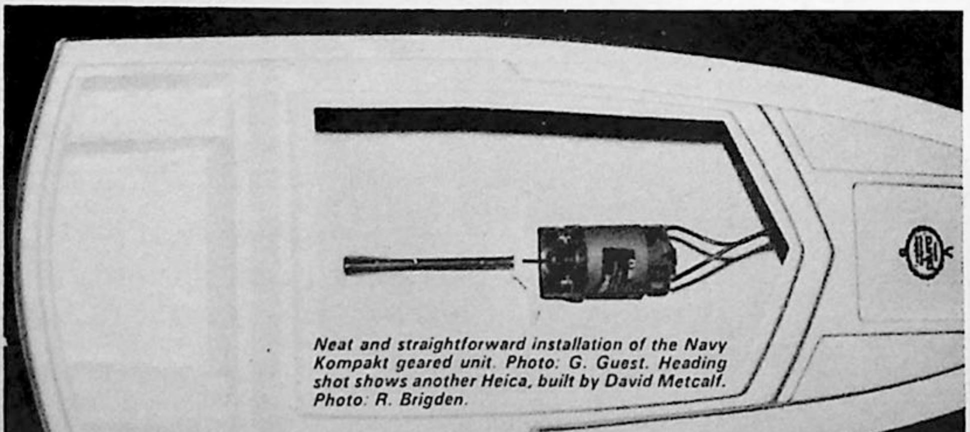

Neat and straightforward installation of the Navy Kompakt geared unit. Photo: G. Guest. Heading shot shows another Heica, built by David Metcalf. Photo: R. Brigden.

KIT BAG

2

Reviewed by Laurie White

Graupner

IT'S funny really how one's first impressions stick in the mind throughout the building of a particular kit, but mine, throughout the making of the *Sea Commander,* were not of the high quality of the hull and deck mouldings, etc. or the best die-cut wood I've ever seen, but the four — yes *four!* — fullsize detailed drawings. I couldn't get over it. One of these was a very detailed 'electrical' sheet, the other three, each measuring 34in. × 48in., were: (1) of window shapes, rail and ladder bending and various constructional techniques, etc., (2) fullsize sectional side view plan and front/rear views, and (3) fullsize again; this time the same views as (2) but in its finished state. Nobody — but nobody — could fail to build this model as per the maker's original. To complement these drawings were three booklets — one, full German with plenty of photos, the second, in several languages — yes, one in English! — and the third was devoted to radio installation. Full marks so far, **Graupner**.

The *Sea Commander* is a model of an ocean going luxury type motor yacht with modern, sleek lines including a flying bridge and an inflatable dinghy with an outboard motor which is suspended above the transom on two davits. The model is approximately 30in. long (38in. with dinghy), and has a 10in. beam. The complete cabin, which is 18½in. long, is removable for access to the hull.

Components

The kit comes complete with fittings comprising two rudder kits, propeller and shaft, a double-jointed coupling, propshaft bracket/oiler, radio mounting board, battery tray and a bag of plastic fittings, i.e., cleats, bollards, dashboard controls, steering wheels, a pendant and a sheet of waterslide decals.

The quality of the major parts, which I presume are vac-formed ABS, is very high indeed. All are well marked out, and once cut to these lines the fit is very good.

Before attempting to do any building of the kit, have a good read of booklets and drawings supplied, because the makers give the builder three different methods of propulsion and each requires its own set-up. They are: one motor and shaft, twin motors, or three. I should think that the latter set-up would go like a multi-racer!

It must be realised, of course, that three motors will not give a very long endurance — probably ten minutes or so — so for that reason I decided on the one motor set-up.

The deck, which is a one piece moulding, was tackled first. The excess plastic was cut off using a sharp pair of scissors (my workshop ones, not the wife's!) This was very easy, but take care. I find it best to cut just outside the line marked, bringing it down to the line with sandpaper on a small block of wood. The cleaned up deck is left with a lip hanging downwards of about $^{3}/_{16}$., into which the hull fits. I cut the hull next, using the same procedure, but this time I sanded and fitted as I went, so that, in the end, the hull was such a good fit into the deck that I once dropped them onto the carpet and they didn't separate!

Motor Mount and Machinery

The two plywood die-cut motor mount/bulkheads were removed from the sheet. Actually, they were so well die-cut that as I picked up the sheet and tapped it on the table, the entire contents fell out! These were glued together with Stabilit Express (supplied) and once set were drilled and cut out to take the motor. Measurements were given on the drawings from the transom to where the bulkhead should be, and as I marked it, I found light markings already there. The bulkhead had to be inclined at an angle so as to be in exact alignment with the propshaft. This was achieved with the

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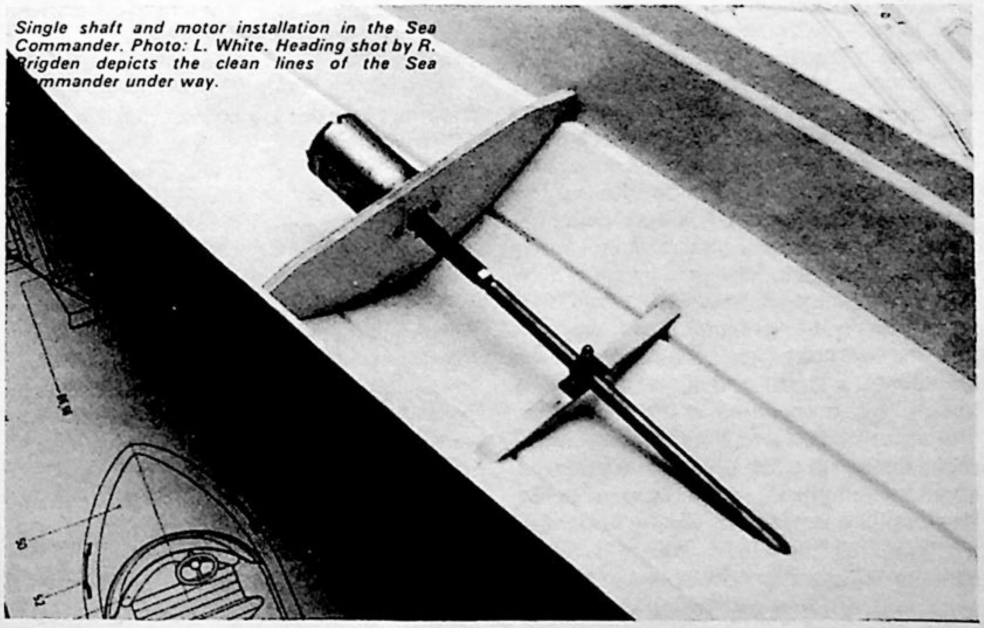


Single shaft and motor installation in the Sea Commander. Photo: L. White. Heading shot by R. Brigden depicts the clean lines of the Sea mmander under way.

HEICA

Provided you don't overdo the application and risk softening or distorting the plastic, Osma will produce good joints in this kit. It also has the advantage over epoxy of producing joints you can handle in minutes rather than having to wait hours.

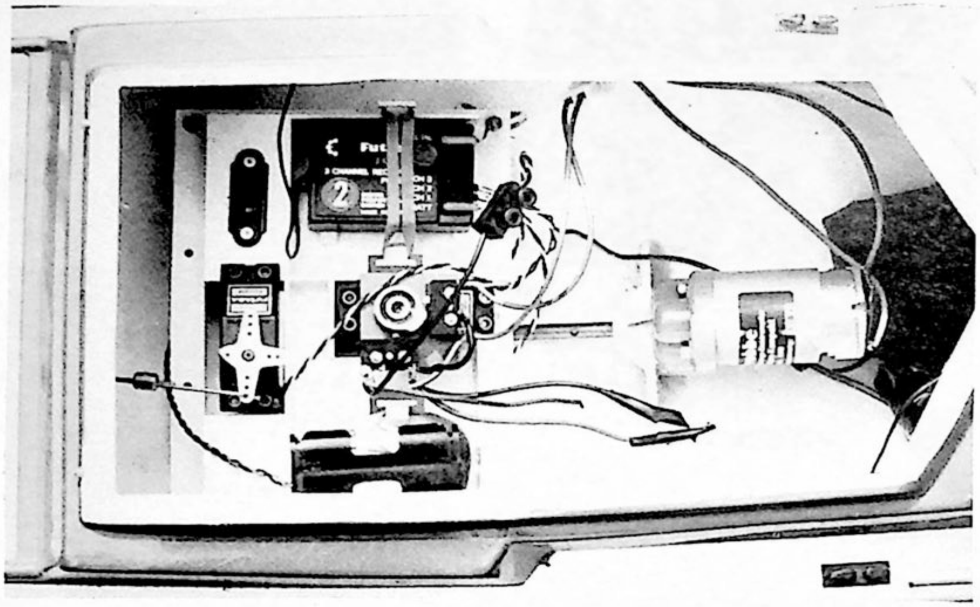
Confused Construction

I expected an easy job since this model appeared to be an assembly project rather than a test of skill and patience which some kits are. This proved true in many respects and some clever design features are incorporated. The use of a moulded plastic tray upon which the receiver, servos and battery pack are mounted is an excellent idea, since 90 per cent of the R/C installation can be performed outside the model. The tray is fixed into the hull by means of four ball-headed bolts at the corners which snap into matching ball links stuck to the hull bottom. This also enables you to remove the R/C gear very easily at any time. Another good idea is the rudder push rod which is supplied in two parts, joined in the centre by a collar. This makes it child's play to adjust the push rod to the correct length before locking the collar in place.

The drive motor and rudder assembly appeared to be straightforward installations but they did involve a couple of tricky features. The **Navy Kompact** unit required dismantling and a lubrication hole drilled in the stern tube, a task which, I thought, negated the advantages of supplying a one-piece drive unit. Notwithstanding this feature this model must have the easiest motor-shaft installation ever, due to the pre-drilled tube hole and moulded plastic motor bracket, the latter being a welcome change from the dubiously shaped piece of wood often supplied in kits. Lack of clearance made the fitting of tiller, O-ring and washer at the top of the rudder shaft a task best carried out when young children are out of earshot!

In keeping with the character of this kit I expected the railings to be plastic mouldings, but brass tube is supplied. This enables a robust railing to be constructed but does introduce metal cutting and filing again. A clever idea is to use split pins to join the stanchions to the handrails but a bad idea is to supply split pins which are too small to fit the tube. Still, I enjoy soldering brass tubes together!

One problem occurred with the cabin. After cutting it out I found that it didn't fit over the hull coaming. The cabin was about a millimetre short, and instead of fitting snugly, a gap appeared at the front edge. The securing bolt was thus too short, and I replaced it with a similar sized self-tapping screw which fixed into a block of wood stuck to the underside of the deck. The resulting hull-cabin joint was not too bad in appearance but this poor fit is a matter for some concern in a beginner's kit.



Neat layout of radio tray in Heica. Some modifications were required to fit the Robbe switcher unit onto Sanwa servos.

Bland Loyalty?

In line with the degree of completeness aimed for, an electric motor switcher unit is supplied. This consists of four micro-switches mounted on a plastic plate which fits over a servo. The micro-switches are operated by a cam fitting in place of the servo output arm. This unit is pre-wired with plugs to connect with the motor and two drive batteries.

All this sounds very commendable since the electrical side of model making can be confusing, but it does bring out a failing which is common to many German kits. The manufacturer appears to assume that, because you have bought his kit you will only use accessories supplied by him. In this case the switcher is designed for **Robbe** (née Futaba) servos. The micro-switch plate will fit other makes of servo but the cam, with a large square recess, is designed to fit on the output shaft of one make alone. Only after a lot of careful cutting and drilling could I make it fit my **Sanwa** servos.

The same situation exists with the drive battery plugs. Possibly batteries with matching sockets are widely available in Germany, but are not apparently so on this side of the Channel. No circuit diagram for the switcher was provided so it was a case of deducing the way it worked and how the batteries should be connected before replacing the plugs with more suitable line connectors. For anyone else in this situation the red wires are positive and the black negative. The switcher uses two battery packs and connects them to the motor in either parallel or series for half or full speed, reverse being half speed. For this reason the two battery packs must be of identical voltage and capacity to avoid uneven discharge or reverse polarity. The instructions state the need for identical batteries but fails to say why this is so.

Down to the water

The balance of the model is adjusted by moving the battery boxes, then sticking them firmly in place. I didn't see the point of using wooden strips to keep these boxes level and fixed them directly to the hull bottom with double-sided servo tape, much easier and the batteries have yet to fall out of place.

The first thing you notice on the maiden voyage is that it's fast! Using the recommended 4.8 volt 1.2 or 1.8 a/hr Ni-Cad packs the speed is about 7-8 mph (about 12km/hr), which is not far short of competitive fast electric performance. For a beginner this could prove fatal; you know — 'Where did that boat/branch/concrete bankside (delete as appropriate) come from?, and two three-cell (3.6 volt each) Ni-Cad packs produce a more than adequate 5-6 mph. Another problem with the recommended 1.2 or 1.8 a/hr. cells is the limited duration of 10 to 20 mins. The

Heica shows an impressive turn of speed on the geared Navy drive unit. Photos by G. Guest.

battery boxes will accommodate three 4 a/hr. Ni-Cad cells. The extra weight has a negligible effect on performance and gives up to an hour's run.

The *Heica* proved to be a very smooth sailing model. Rudder response was progressive, and turns down to 6ft. (2m). dia. were easily achieved. Upon centralising the rudder the model would immediately run straight. Past experience suggested that when reversing a planing type of hull you abandoned all hope of steering, but this was not so with the *Heica*. There was a noticeable delay before answering the rudder command and the model tended to carry on turning after the rudder was centralised, but a little practice and anticipation enabled controlled sailing astern to be achieved.

Sailing trials did reveal a drawback in the motor switcher unit supplied. The degree of control, whilst better than simple on/off, was rather limited, with the full/half speed system employed in this relatively light and powerful model. Attempts at precise manoeuvres, e.g., docking and turning in confined areas, were jerky to say the least.

Conclusions

I may seem to have concentrated on reporting the model's failings, but it is a very infuriating model to build. It has so many things which could make it the perfect beginner's introduction to our hobby, but has some annoying features. The need for drilling a hole in the stern tube was really puzzling in a prefab. type of kit. More than average dexterity is required at times, due to the limited access inside the hull. Some lack of attention to detail was indicated by the poor fit of the cabin, and supplying split pins too small to fit the brass tube handrails.

The fact that the motor switcher unit was designed to fit one make of servo alone was annoying. This could have been forgiven were it not for the limited degree of control available with the full/half speed system employed. In this area the use of a wiping board variable resistance control unit ought to be considered by **Robbe**. This would enable better use of the excellent **Navy Kompact** to be made, and if mounted remote from the servo it would allow any make of radio to be used.

The sailing performance was good, with potential for steering competitions. As well as looking good whilst sailing, the geared motor makes a not too unrealistic sound as it growls around the pond chasing tugs!

Would I recommend it to a beginner is the vital question to be answered, and my reply is most definitely, 'Yes'. It may have many faults, but with a little care and thought a novice should build a successful model. Mine has, if anything, proved too popular since our youngest daughter has claimed it for her own, and is constantly reminding me to keep its batteries charged up!

Heica retails at £55.95 inc. motor. Dis- by **Cougar Craft.**

SEA COMMANDER

aid of a template which of course was supplied. The motor I used, incidentally, was a Falcon, from **Model Craft**, similar to the Cyclone 20 type. The propshaft exit hole (ready marked again) was cut out, and the shaft fitted using bearing block and support supplied, and once the coupling was fitted between the motor and shaft, alignment was perfect. Again, all components were fixed with Stabilit. One small criticism: all the instructions on the box of Stabilit were in German, so if you've never used this before, beware.

No matter which of the three possible motor set-ups you decide upon, there is one common factor, and that is twin rudders. Now, I believe this to be okay with two or three motors where there is propwash over the two rudders for the best turning effect, but I've had experience in the past of a single prop in between two rudders, and the boat didn't steer too well at all, so to be on the safe side I mounted a single rudder centrally. It turned out okay, since the boat has about a 4ft. turning circle. The trouble is, I don't know how it would have performed with the two. Still, I'm happy with 4ft.

The deck was inverted, a bead of abs cement was run all around the inside of the lip and the hull fitted in. The instructions advise use of clamps, i.e., clothes pegs, but in this instance the fit was so good that nothing was needed. Once dried the assembly was surprisingly rigid, and there was absolutely no sign of a joint. Two rectangular openings were cut out of the cockpit area to allow access to the steering gear; it was nice to see that a bit of thought was given to the design of these openings since there is a trough or gully moulded all the way around the opening to prevent the ingress of water. The whole of the cockpit floor area is covered with a thin piece of ply which is printed to represent planking, with two removable sections that cover the two aforementioned openings. This piece of flooring is so well die-cut that it needs no trimming or alteration whatsoever before fitting.

A full width trimtab had to be fabricated from off-cut material and cemented to the bottom of the transom. This, claim the manufacturers, is to allow the hull to plane, which apparently it won't otherwise do. Take a bit of care here. It has to be accurately done. Plenty of instructions and drawings take care of this, though.

Cabin

Once again, the cabin was a one piece moulding, with the window openings clearly marked. Having cut off excess plastic and trial fitted to the deck, the windows were prepared. I carefully drew over the markings with a ball-point pen and a small steel rule. Then, with a modelling knife (I use a Swann-Morton), a nice new blade, and steel rule, I scored along the pen lines. The blanks popped out easily.

The rear cabin bulkhead was a piece of die-cut ply, which was rather surprising, since apart from the cockpit floor, it was the only piece of external wood. It had to be filed and painted white anyway, so why not abs sheet? The cabin is braced with a perfectly shaped die-cut ply former, which again, with all its associated ply pieces needed no reworking whatsoever.

Do take care in the cutting out and fitting of the flying bridge fairing and especially the 'bridle' mast, since all the joints can be seen externally, and ill fitting or messy joints could spoil the model's appearance. The 'bridle' mast, incidentally, is the up-and-over, roll over type bar on the bridge, to which the radar housing and pennant is affixed.

Window installation and handrail forming was easily accomplished and quite straightforward. The dinghy davits were again cut from mouldings, and braced internally with wire supplied. The dinghy itself was in two pieces, top and bottom, and care is needed in cutting and fitting. Sellotape or similar is invaluable in the building of this kit, especially so in the case of the dinghy. The outboard motor is made in two halves, plus a few bits and pieces, and looks very realistic once fitted and painted. The swimmers' platform, bollards, cleats, etc., are so straightforward that they don't really need mentioning.

I painted the hull with enamel paint, as per box top photo, but I deviated somewhat on the cabin. Since there are several contour lines one can choose from the modeller has several choices.

For motor power I used eight 4 amp/hour Ni-Cad batteries. These were taped and soldered together in two separate flat packs on the battery tray, the rudder servo was servo-taped centrally between the two packs, and the rest of the radio gear was located on the tray provided ahead of the motor, servo-taped down again.

Performance

Placing the boat on the water for the first time showed that it needed no alteration to weight distribution at all. I opened up the throttle and it went straight up on to the plane with quite a good turn of speed, considering it had only one out of a possible three motors. Two motors would, I imagine, give a very lively performance, and three — well I reckon it would take off! With no hands on the stick it went straight as a die, was very clean on the water and had the very tight turning circle of approximately 4ft.

Conclusions

One cannot fail to be impressed by the quality of the kit, the drawings and instructions. It looks good too. Nice one, Graupner!

Sea Commander retails at £44.50. Distributed by **Ripmax.**

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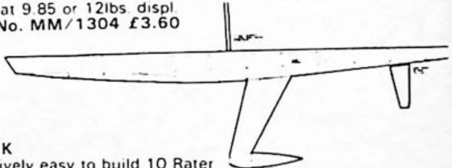

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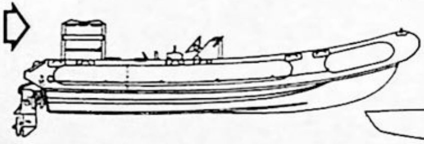

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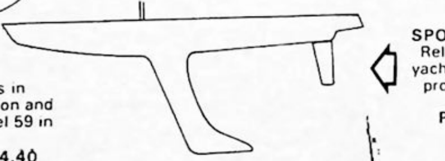

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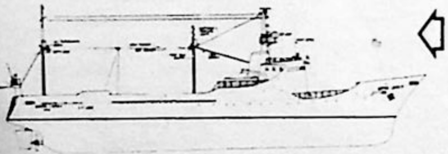

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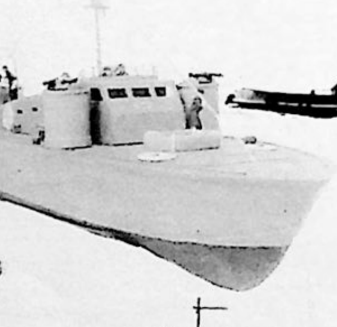

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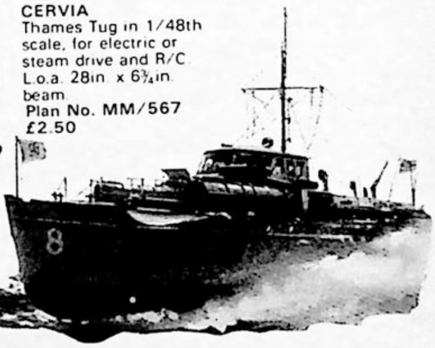

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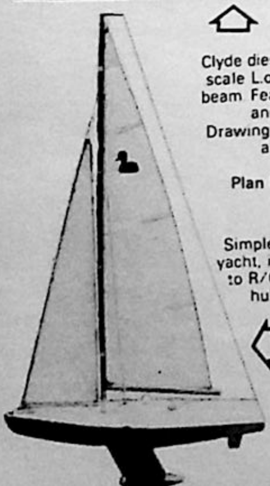

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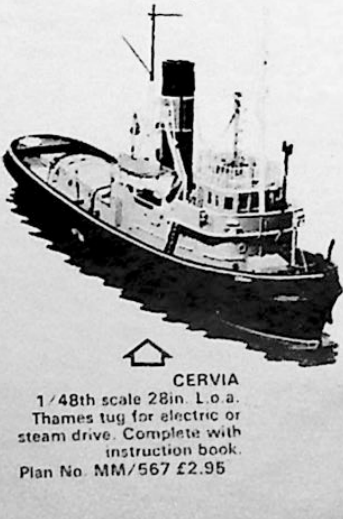

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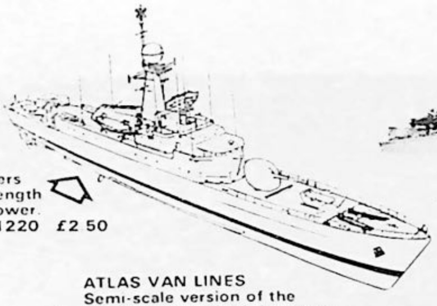

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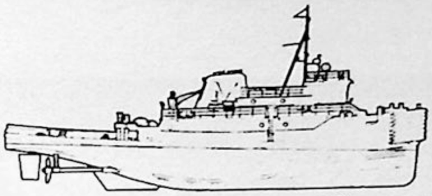

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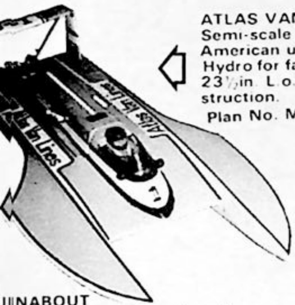

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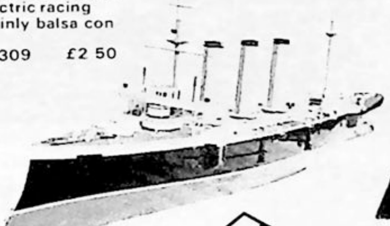

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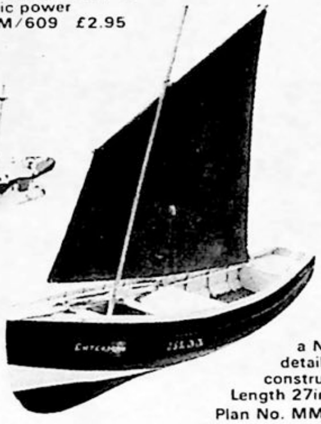

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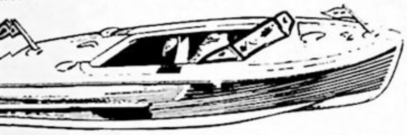

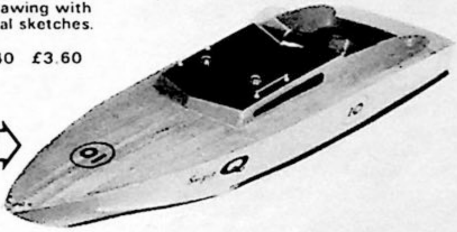

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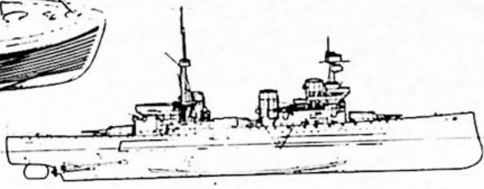

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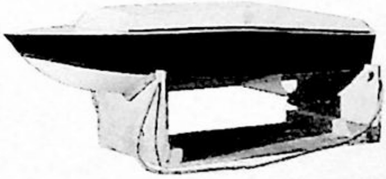

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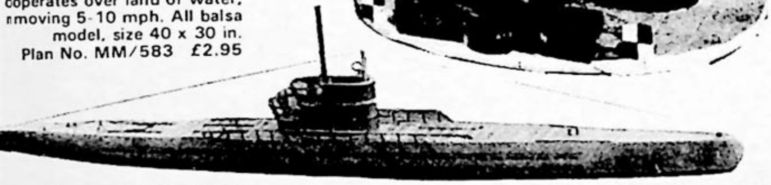

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MODEL POWERBOAT Hull Design

Part Three

Discussed by RON WARRING

THE deep-vee hull form originated in full size power boats circa 1959 and it was not until many years later its possibilities for model hulls was appreciated and exploited. Even now the description 'deep-vee' is not always properly applied, or understood, especially as the original concept has become modified.

The first deep-vee hull design appeared as a one-off 23ft. long power boat designed by Ray Hunt as an off-shore tender for an America's cup contender. It was radically different from previous hard chine hulls in having a *constant* deadrise of 24 degrees giving the characteristic deep-vee bottom, with a further unusual feature — spray rails running from bow to stern.

Its ability to maintain high planing speeds in rough water was impressive — so much so that Dick Bertram commissioned a similar hull to be built as a racing power boat for the Miami-Nassau off-shore race. Its virtually instant success started a new trend in off-shore power boat hull design, both for racing and pleasure. The deep-vee hull was, in fact a tremendous step forward in fast off-shore power boat hull design.

The first production deep-vee was the *Bertram 31* (**Fig. 1**) — a sports fishing boat, fast off-shore cruiser, or successful race boat fitted with more powerful engines. (It is still, in fact, in production as a sports fisher in 1982). By modern standards, however, it is dated, and although being one of the most outstanding fullsize power boat designs ever produced, emphasises some of the limitations of the original concept of the deep-vee form. Equally its lines, carried forward into many other production boats by Bertram and others has dispelled many criticisms levelled against the deep-vee over the years.

Apart from the deep-vee bottom, the other noticeable feature of the *Bertram 31*

Fig. 1

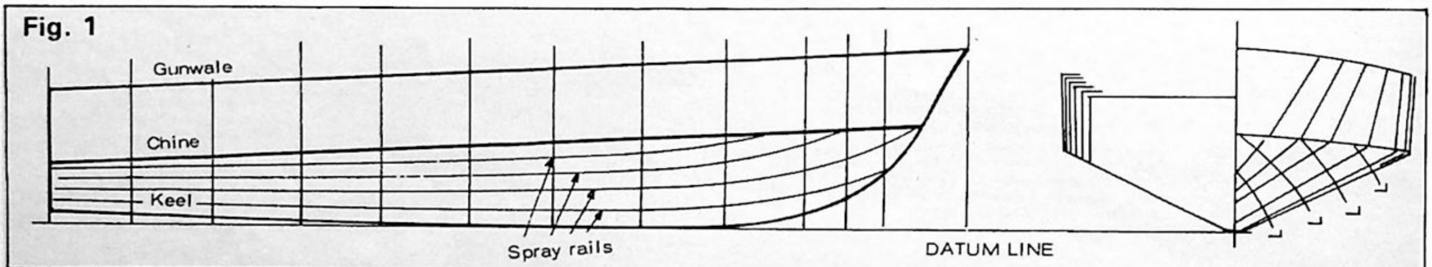


Fig. 2

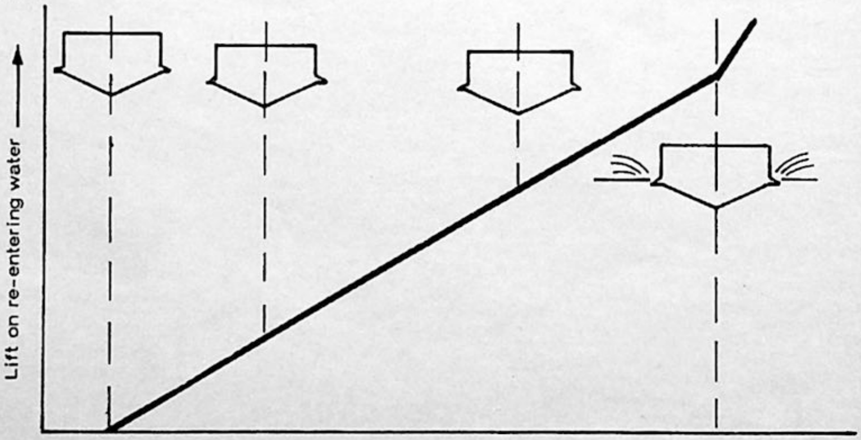
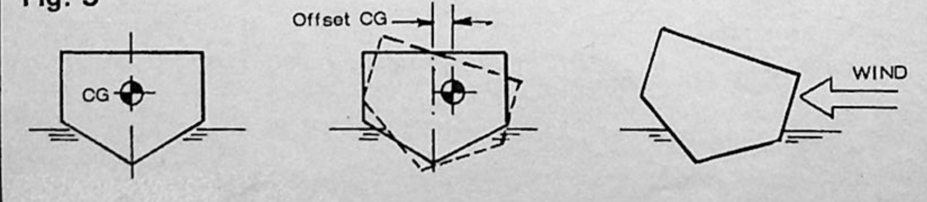


Fig. 3



hull is the extreme beam width of 11ft 2in., giving a beam ratio of 36½%. Driven really hard into a roughish head sea — and racing versions of this hull reached 50mph in the mid-1960s — it literally proceeded in a series of leaps, giving driver and crew a hard jarring ride. The other driving characteristics were excellent, however; a superbly seaworthy boat and a quite superior directional stability running in a following sea, even hands off the wheel. A safe *fast* seaboat, in fact the faster you could drive it, the better it ran — but despite the spray rails, *very* wet.

From this original Ray Hunt design virtually all the other deep-vees evolved with progressively reducing beam ratios, leading to the modern needle-nose off-shore racers.

Requirements for fullsize and model deep vee hulls are different in some respects, similar in others — so it is instructive to study the characteristics and potential modifications in some depth, especially as so much nonsense has been written about deep-vees, and even perpetuated in hull deisgns, both model and fullsize.

Start with a look at the basic cross section itself. It is inherently softer riding than a flat-bottom hull, if displaced upwards and subsequently re-entering the water. Buoyancy or 'lift' progressively increases until the chines reach the water, when it will 'slam' — **Fig. 2**. Basic methods of making the hull even softer are (i) to increase the vee angle; (ii) eliminate a 'hard' chine; or (iii) decrease the beam and increase the length (decrease the beam ratio). All can affect *directional* stability.

Now look at the deep-vee section running 'straight and level' — **Fig. 3**. With a purely plain V-bottom it is virtually 'balancing' on the vee, making it critical on thwartship weight distribution. Unless the CG comes exactly above the apex of the vee the hull will tend to 'topple' and continue to run with marked heel. This, in fact, can be cured with spray rails — so spray rails are an essential feature on a deep-vee hull. But even so, a deep-vee hull *with* spray rails will still have a tendency to 'lean' *into* the wind whilst running straight in a crosswind. This effect can be minimised by (i) reducing side area of the hull and superstructure; (ii) keeping the centre of gravity as low as possible and (iii) using transom tabs differentially for lateral trim.

Fig. 4

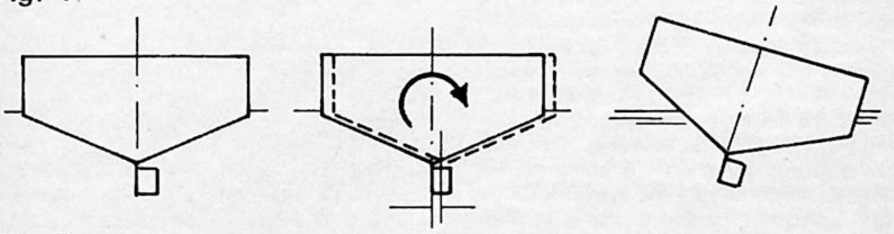


Fig. 5

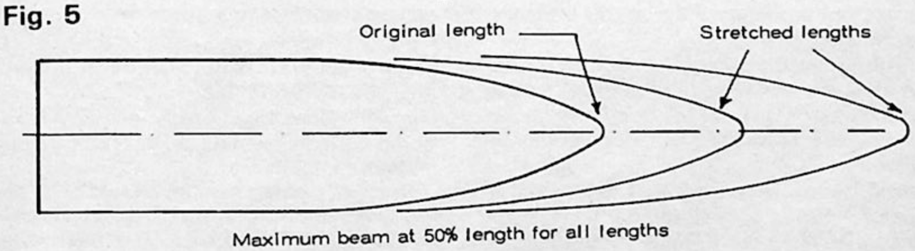


Fig. 6

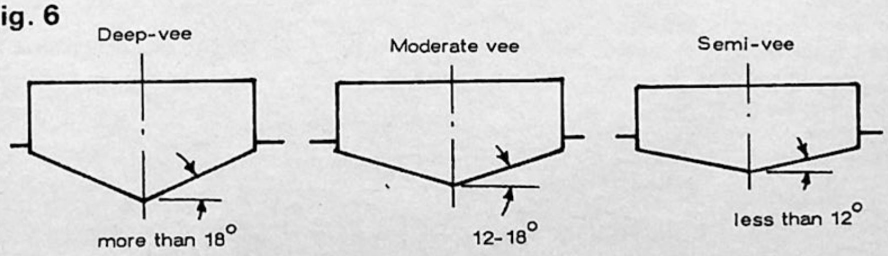
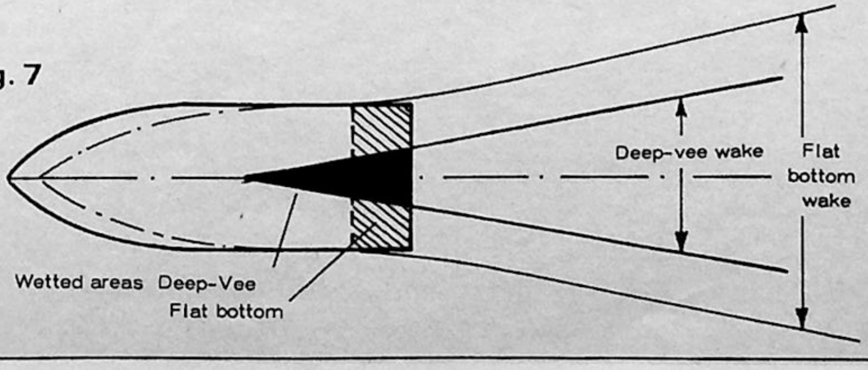


Fig. 7



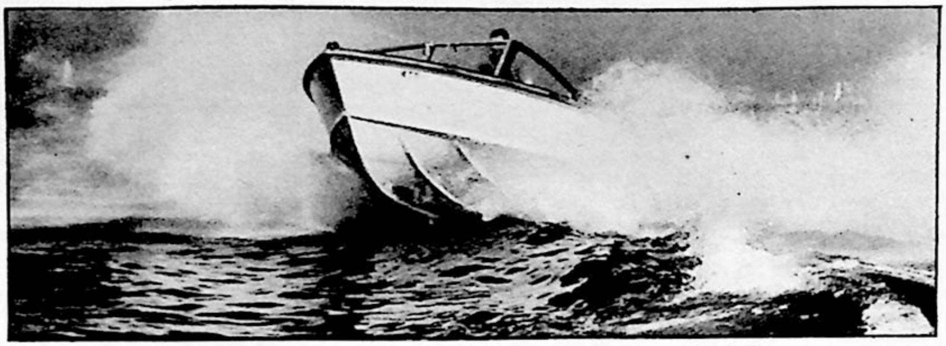
In a *turn* induced by rudder the V-section works rather like dihedral on an aeroplane's wings. The reaction to rudder is to generate a force pushing the hull sideways. The V-section presents a surface at a substantial angle if side-slipped, immediately rolling the hull into a banked turn, with virtual absence of skidding — **Fig. 4**. If the hull design is right, in fact, there is no sideways 'g' force — as can be demonstrated on a fullsize boat by making a steep turn (in dead calm!) with a full glass of water standing on the cockpit floor or coaming without spilling a drop. Actual turning *radius* achieved, however, is dependent on the degree of inherent directional stability of the hull. Deep-vee hulls can prove difficult to turn tightly at speed on rudder power.

Scaled down hulls of the early deep-vee form make excellent models in hull sizes from as small as 12in. up to about 30in. for electric motor power — either for freelance designs or scale models. Their generous beam and inherent stability gives good seaworthiness in quite choppy water, but with a proneness to roll violently in a cross sea. They perform best with enough weight aboard to ensure that the chines are immersed aft. More modern deep-vee hull designs are, however, desirable for good high speed model performance, powered by i.c. engines; or for fast electrics.

The evolution of the modern fullsize deep-vee racing hull has followed on more or less common lines, differing only in detail design, notably in the forward chine line and bow sections. The main difference has been in the increasing length adopted as the 'optimum'. Quite early on it was found that the basic deep-vee hull lends itself readily to 'stretching', i.e. simply in increasing the length whilst retaining a similar beam. The extra length improved fore and aft stability in rougher water (in conjunction with adjustable trim via transom tabs) and, in fact, enabled higher speeds to be realised on the same engine power. (Another important factor was to keep hull weight similar, using lighter construction).

From a standard 27-28 ft. hull length sizes increased to 33ft., 35-36 ft., and eventually 39-40 ft., which was found to be about the limit for the power available — all on about 9ft. beam. Typically in Offshore Class I, the deep-vee monohull 36ft. length by 9ft. beam has become a norm for calm weather; and the 39ft. length by 9ft. beam a 'rough weather' alternative (slightly slower in calm but faster overall on an off-shore course in rough water).

This particular progression is illustrated in **Fig. 5**, the basic hull sections remaining similar to Don Arronow's designs in



The original 23ft. Ray Hunt deep vee, the direct ancestor of all modern deep vee racing hulls.

America produced through *Formula, Magnum* and *Cigarette*, rivalled only by Don Shead's designs in Britain. Virtually all the competitive off-shore power boat hulls are, in fact, variants on the *Cigarette* hull form, detailed in the next article in this series.

Hull lines of this form with a beam ratio of around 25-30 per cent scaled down to 1/10th or 1/12th size make excellent high performance models powered by i.c. engines — although not necessarily top-performing models for speed or steering, especially under calm conditions. The high perforance *model* hull seems far less amenable to 'stretching' than its fullsize counterpart, and is usually best with a fairly generous beam ratio of up to 40%. This is particularly the case when hull size is reduced — e.g. to below 30in. length for 'fast electrics'.

Requirements for fullsize and model deep-vee hulls are thus different in some respects, though similar in others.

How much Vee?

The classic deep-vee hull has a 24 degree deadrise angle *constant* throughout its length. This is considered a maximum value for fullsize design, but up to 30 degrees might be considered on a model. Early deep-vee model hulls designed by the author used 30 degrees, mainly as a matter of convenience of plotting and setting up with a 30 degrees set square. They were also wide beam hulls on the original Ray Hunt formula, where a deeper vee angle was thought could be beneficial on model sizes to produce a softer hull. With lower beam ratios 24 degrees deep-vee is the maximum necessary. Here it is interesting that the *Magnum 27*, a 1968 design with relatively narrow beam and 24 degrees deadrise is still one of the most potent offshore racing boats for its size. The original hull design accommodated more and more powerful engines without modification and a current stock (fullsize) *Magnum 27* offers 90mph top speed.

Most modern deep-vee hulls — both model and fullsize — depart from the original concept of a *constant* deadrise angle. This, too, was originally of practical convenience for hull construction in plywood. Thus the deadrise angle is increased progressively from transom to stem, with the benefit of yielding a softer riding hull and better stabiliy in the pitching plane. The main difficulty with all high speed hulls — model and fullsize — is to control pitching motions and minimise porpoising.

With a warped bottom (changing deadrise angle throughout its length), we are back to a similar concept to the conventional hard chine hull, except that there is still a marked V angle at the transom. Such a hull can then be defined by its transom deadrise angle (**Fig. 6**), e.g.

(i) anything above 18 degrees — deep-vee;

(ii) 12-18 degrees — moderate-vee;

(iii) less than 12 degrees, semi-vee leading progressively to a conventional modern hard chine hull with perhaps only 5 degrees deadrise at the transom. (Earlier hard chine hulls were flat at the transom, i.e. had no deadrise).

The fallacy that a deep-vee hull can never be as fast as a flat bottom hull, size to size and power to power, has long been dispelled by results. In fact, it is essentially a *cleaner* hull as far as running is concerned, generating a narrower wake at speed — **Fig. 7**. The triangular form of the wetted area is a more stable 'platform' than that of a flat bottom hull, although it markedly departs from the theoretical ideas of an optimum aspect ratio of about 2.5:1 (Effectively it is a low aspect ratio delta hull at planing speeds, as far as wetted area is concerned).

On the other hand, for the same hull weight and power, a model ski hull (or modified ski-hull) *should* be faster than a model dee-vee under perfectly calm conditions. In rippling water it would be another story — and the ski hull would not be anything like so stable in turns.

The 'Variable Vee' hull

The warped bottom vee hull can lose a lot of advantages if the change in deadrise angle is too great. Starting with a true deep-vee angle at the transom, if the angular change is more than about 10 degrees along the hull length the bow will be too 'soft' and longitudinal stability will suffer as a consequence. Any pronounced pitching motion will allow an excessive length of hull to submerge momentarily, dragging off speed. This can be offset (to some extent at least) by incorporating concavity and generous flare in the forward sections for improved buoyancy in pitch. This will make the hull more 'seaworthy' in a head sea, but less so in a following sea. Under anything but calm conditions, the hull will be slower.

The semi-vee hull, with its flatter transom angle, can tolerate a much greater change in deadrise angle throughout its length. Here, however, there is the danger that it can become a 'chine dragger' when pitched bow down, not only pulling off speed but adversely affecting directional stability. To make a good steering model, in fact, the addition of a small skeg can often work wonders. Also once the transom angle becomes less than about 15 degrees, the hull will probably have 'hard chine' characteristics in generating a definite hump speed which may need other measures to counter.

The modern deep-vee is undoubtedly the best of monohull designs, when suitably proportioned. Whether it can be further improved or not as an 'all weather' hull is debatable; but it certainly can be bettered for sheer speed on *calm* water by flattening

Fig. 8

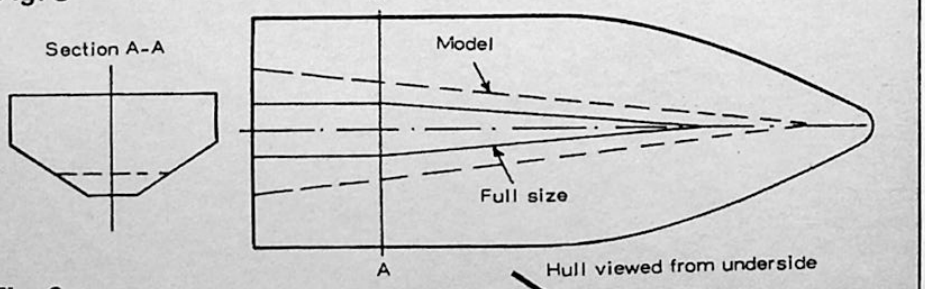
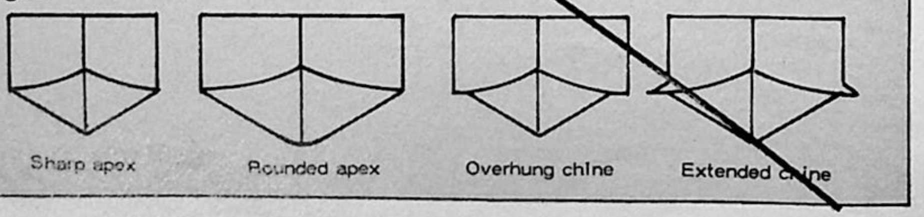
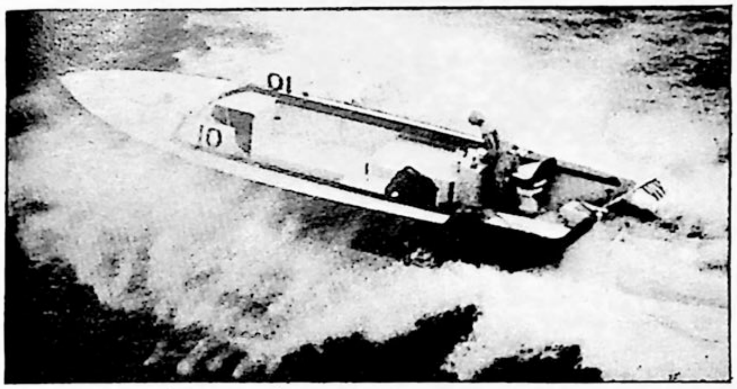


Fig. 9





The original Bertram 31 'Moppie' - winner of the 1960 Miami-Nassau race.

the extreme bottom after sections as shown in **Fig. 8** In effect, this then runs as a delta shaped ski hull at maximum speed, riding on a *flat* bottom area, with 'deep-vee' stability available if the hull rolls, yaws or pitches. Known as a modified ski hull, this form developed originally for models. The same principle, here, with less 'flat bottom area' is now being emulated on fullsize racing hulls.

Sharp or Rounded Sections?

The deep-vee section can have a sharp or rounded apex. It is difficult to generalise on the merits of each. The sharp apex form realises the full benefits of deep-vee stability, and is certainly better employed on narrower hulls. Flow pattern under the centre of the hull into a single propeller is not favourable, however. Models are normally single-shaft drive, so rounding off of the bottom of the vee could be beneficial. On fullsize hulls, the rounded vee apex is more likely to be found on wide beam deep-vee hulls, the loss of directional stability resulting being compensated for by additional spray rails.

A plain chine should be adequate — **Fig. 9** — provided the spray rails are doing their job properly. An extended 'hardened' chine is more likely to be applicable to fullsize deep-vee hulls, especially those of broad beam where the chines are clear of the water at rest. These then provide high damping forces with small angles of heel, but at speed are only effective as spray rails. There are also other variations on chine design employed on fullsize hulls, but none are really applicable — or necessary — with model hulls. They only complicate construction.

Sprayrails

Sprayrails, as previously noted, are essential on a deep-vee hull. But they are not the straightforward devices they may appear at first sight. In fact, they are probably the most critical part of a deep-vee hull where optimum performance is required. They help correct heel, provide directional stability, and also contribute lift. On a high performance hull, the fact that they also deflect spray is of secondary importance, especially on models.

Optimum spray rail configuration, in fact, can only be established on a 'cut and try' basis — which is where the model boat designer has the advantage over his full size counterpart (the latter is usually comitted to a final design at the drawing board stage).

Starting with what is *right*, a basic rule is to use the *minimum* number of rails *necessary*. Two rails each side should be adequate — although a very beamy hull or an exceptionally dee-vee section may need three. The rails should run substantially parallel to the centreline of the hull, and the inboard rails should terminate well forward — **Fig. 10**. How far forward is the 'cut and try' part of the exercise? Rails should be of triangular section to give a flat (horizontal) undersurface, and the inboard rails should be tapered off. Their actual size (width) is a matter for 'guesstimation!'

In side elevation the sprayrails should substantially follow the chine line, with a moderate upward sweep — **Fig. 11**. If swept upwards too abruptly, they will work as 'built in brakes' when the bow is pitched down. On the other hand, if run too flat they can generate downward 'lift' should the bow be pitched down, tending to make the hull behave like a submarine.

Too many spray rails will add unnecessary drag and can also make the hull difficult or impossible to turn properly. The same can happen if inboard rail(s) are carried the full length of the hull to the transom. On a railed model hull, used for steering contests, time spent on getting the rail configuration *right* can pay enormous dividends; on a speed class boat it can be worth an extra mile or two per hour. Even if an original hull is built in GRP, it would be best to make the plug plain and add wood spray rails to the final hull moulding, the optimum positioning, length, and size of which can then be determined by practical tests.

Fullsize hull designs — except for pure racing power boats — are *not* good examples to follow. Many have sprayrail configurations which are far from satisfactory, and which are perpetuated through production hulls by being an integral part of the original mould. Also, on non-racing hulls, spray rails may be incorporated specifically *to* deflect spray and keep the boat dryer — not primarily as *performance* improvers.

(To be continued)

Fig. 10

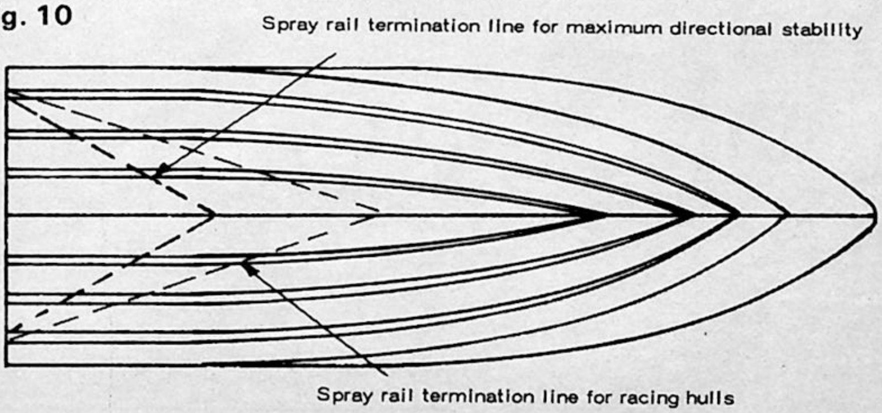
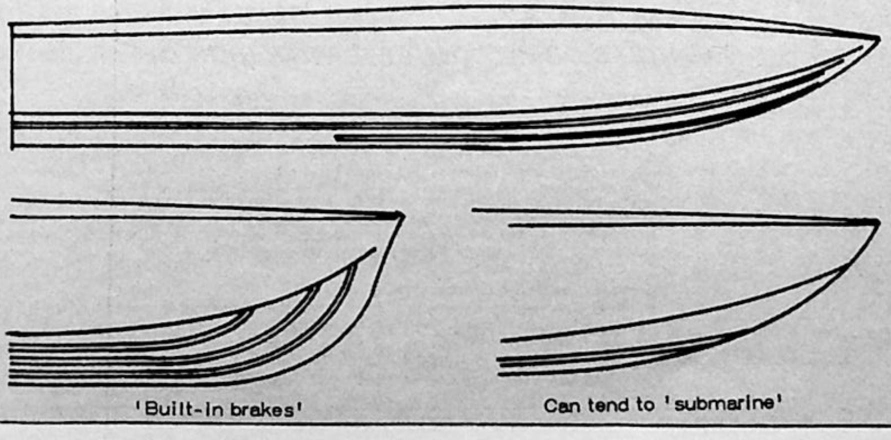

Spray rail termination line for maximum directional stability
Spray rail termination line for racing hulls

Fig. 11

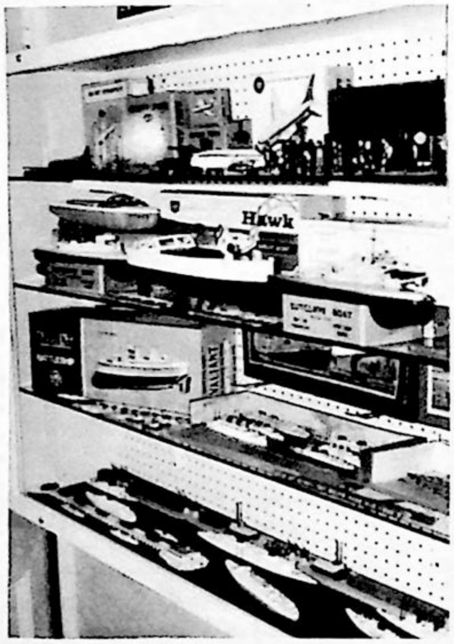


Traditional Steam Engines

by Basil Harley

No. 39

The Vintage Toy and Train Museum, Sidmouth



WHEN John Field first opened his draper's shop in Sidmouth, Devon, in early Victorian days he could hardly have dreamed that, over 135 years later, part of the (now listed) premises in the heart of this popular seaside town would be turned into a specialised Museum of toy versions of machines and boats the like of which he could never have imagined. A local resident, Mr. David Salisbury and his son John have for some time been collecting toys, especially the products of Meccano Ltd., and, as with many another collector, have for long hoped to have a museum in which to display them. Now this has happened and well conceived and laid out rooms on the first floor of Fields Department Store in the Market Place are now full of boats and trains, mostly Hornby, made over the past 50 years or so.

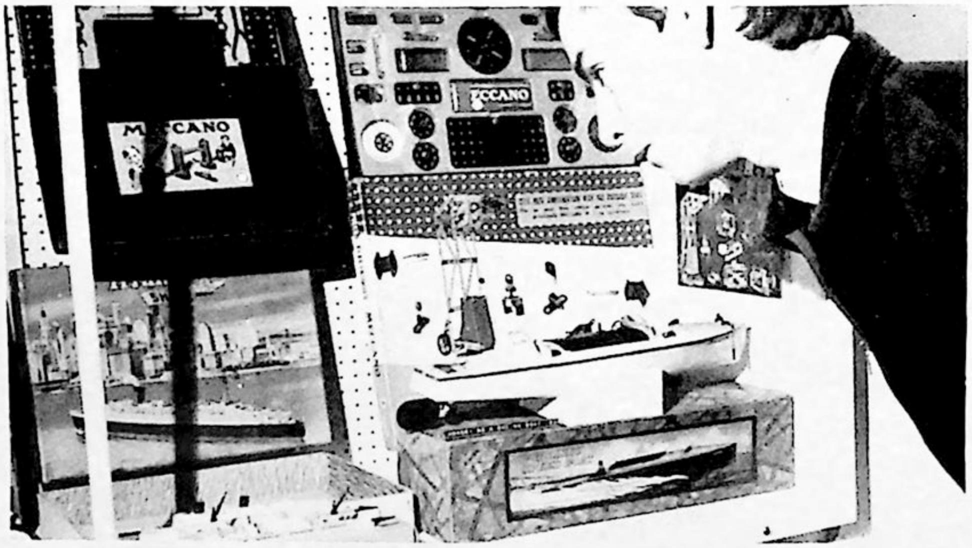
All the toys are in fine condition and the marine side also includes a number of Sutcliffe clockwork boats which includes the *Valiant* battleship, the modern version of their famous 1920s pop-pop boat. There is an attractive display of die-cast waterline ships and port installations made by Tri-ang. These miniatures include a rare and delightful seaside pier with a paddle steamer alongside — all very much collectors' pieces. From 1934 comes a fine Hornby No. 3 Racing Boat with its original box and there are lots of other now long obsolete ships.

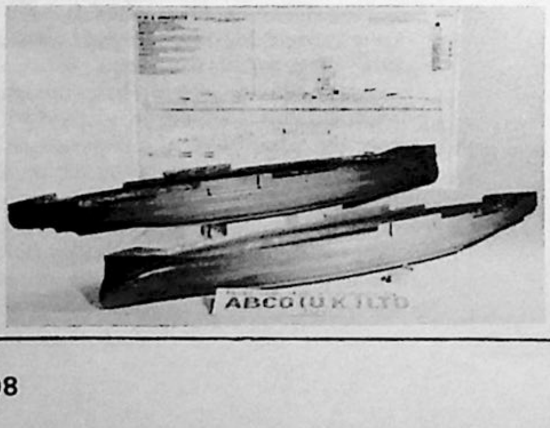
The Dinky Toy collection includes waterline models of warships and a box, Famous Liners No. 51, containing *Britannic*, the Italian *Rex*, the *Europa* and the *Empress of Britain* all of which take us back to the great days of the transatlantic liner.

There are, of course, lots of other things to remind the older ones among us of the 'good old days' of our childhoods — a typical English Hornby train layout, a collection of French Hornby rolling stock, G.W.R. jig saw puzzles and other things all with a considerable emphasis on the attractive packaging of the time.

Since its opening at the end of May the Museum has attracted a lot of interest and it is obviously a 'must' for any readers staying in Sidmouth. For others both the town and the Museum are well worth a diversion to visit when travelling along the South Coast. The Museum will be open until the end of October from 9.30 a.m. to 5.15 p.m. (closed for lunch from 1.00 to 2.00) from Monday to Saturday though it is closed on Thursday afternoons.

Left: Sutcliffe boats and Dinky miniatures in the Vintage Toy and Train Museum. Below: John Salisbury looks at a 1935 speedboat in the family museum.





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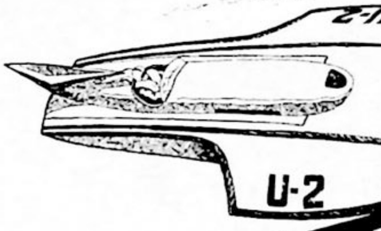

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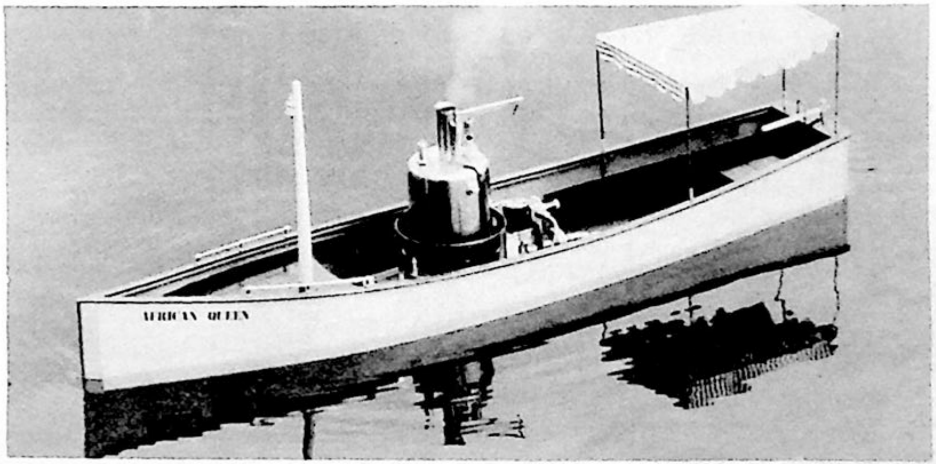

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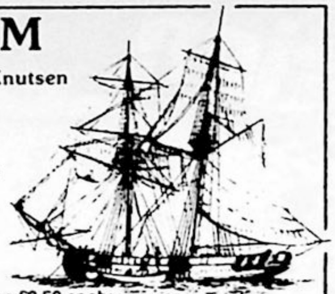

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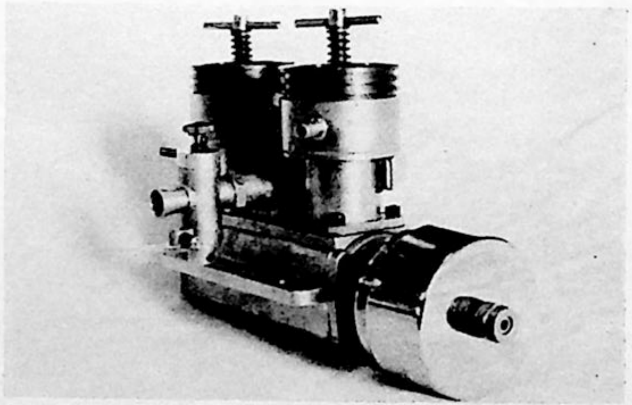

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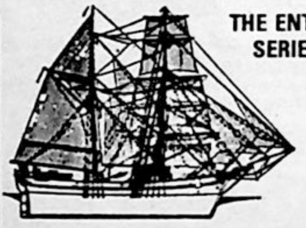

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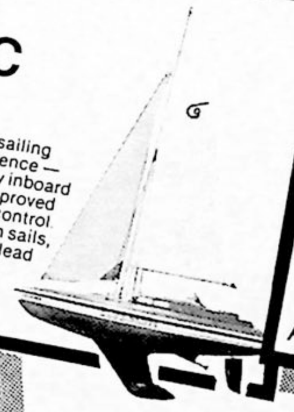

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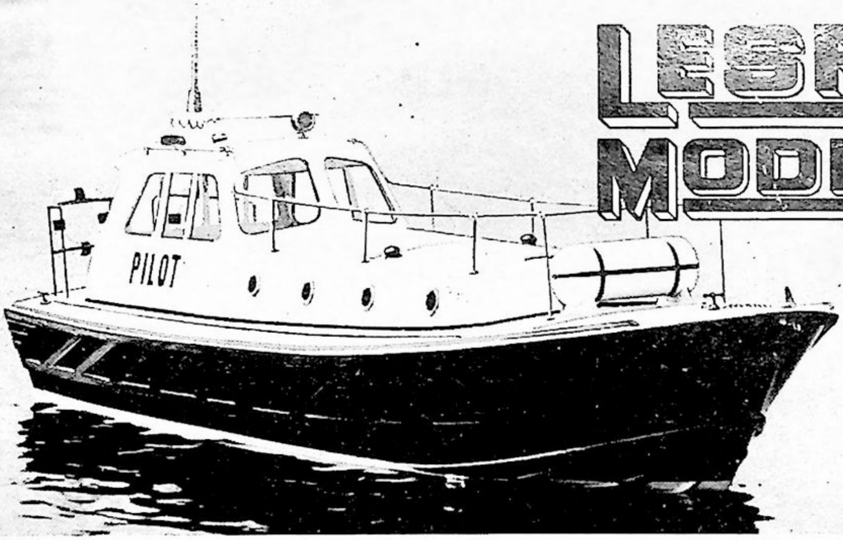

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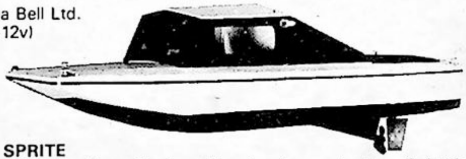

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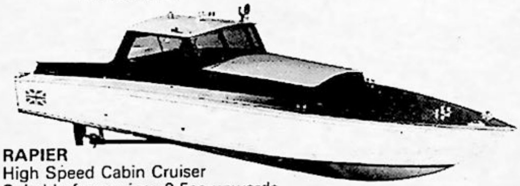

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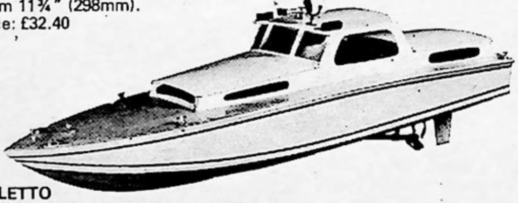

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